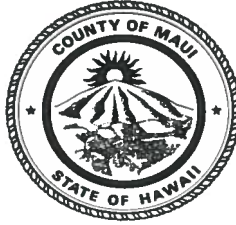


ALAN M. ARAKAWA  
Mayor

KYLE K. GINOZA, P.E.  
Director

MICHAEL M. MIYAMOTO  
Deputy Director



**COUNTY OF MAUI  
DEPARTMENT OF  
ENVIRONMENTAL MANAGEMENT**  
2050 MAIN STREET, SUITE 1C  
WAILUKU, MAUI, HAWAII 96793

July 22, 2015

MICHAEL RATTE  
Solid Waste Division

ERIC NAKAGAWA, P.E.  
Wastewater Reclamation Division

**FILE COPY**  
**AUG 08 2015**

**RECEIVED**  
**15 JUL 28 P3:53**  
**OFF. OF ENVIRONMENTAL  
QUALITY CONTROL**

Ms. Jessica Wooley, Director  
Office of Environmental Quality Control  
Department of Health, State of Hawaii  
235 South Beretania Street, Room 702  
Honolulu, Hawaii 96813

Dear Ms. Wooley:

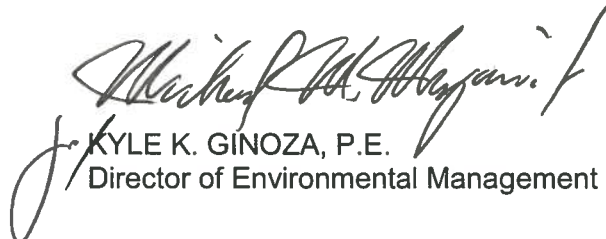
**SUBJECT: DRAFT ENVIRONMENTAL ASSESSMENT (EA) FOR PROPOSED MAKAI HANA  
LANDFILL CLEAN-UP AND CLOSURE PROJECT AT TMK (2) 1-3-006:012,  
HANA, MAUI, HAWAII**

The County of Maui, Department of Environmental Management has reviewed the Draft Environmental Assessment (EA) for the subject project, and anticipates a Finding of No Significant Impact (AFONSI) determination. Please publish notice of availability for this project in the next available Office of Environmental Quality Control (OEQC) Environmental Notice.

Enclosed is a completed OEQC Publication Form, two (2) hard copies of the DEA-AFONSI, an Adobe Acrobat PDF file of the same, and an electronic copy of the publication form in MS Word.

Should you have any questions, please contact our planning consultant, Colleen Suyama of Munekiyo Hiraga at (808) 244-2015.

Very truly yours,

  
KYLE K. GINOZA, P.E.  
Director of Environmental Management

**Attachments**

cc: Elaine Baker, Department of Environmental Management, Solid Waste Division (w/one copy of Draft EA)  
Colleen Suyama, Munekiyo Hiraga (w/out attachments)  
Ali Mehrazarin (w/one copy of Draft EA)

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**AGENCY ACTIONS**  
**SECTION 343-5(B), HRS**  
**PUBLICATION FORM (FEBRUARY 2013 REVISION)**

**Project Name** Proposed Makai Hana Landfill Clean-Up and Closure Project  
**Island:** Maui  
**District:** Hana  
**TMK:** (2)1-3-006:012  
**Permits:** Conservation District Use Permit and Special Management Area Permit  
**Proposing/Determination Agency:** County of Maui  
(Address, Contact Person, Telephone) Department of Environmental Management  
2050 Main Street, Suite 1C  
Wailuku, Hawaii 96793; Contact Person: Kyle Ginoza,  
Director; Telephone: (808) 270-8230

**Accepting Authority:** Not Applicable  
(for EIS submittals only)

**Consultant:** Munekiyo Hiraga  
(Address, Contact Person, Telephone) 305 High Street, Suite 104, Wailuku, Hawaii 96793; Contact  
Person: Colleen Suyama, Senior Associate; Telephone:  
(808) 244-2015

**Status (check one only):**

☒ **\_X\_ DEA-AFNSI** Submit the proposing agency notice of determination/transmittal on agency letterhead, a hard copy of DEA, a completed OEQC publication form, along with an electronic word processing summary and a PDF copy (you may send both summary and PDF to [oeqchawaii@doh.hawaii.gov](mailto:oeqchawaii@doh.hawaii.gov)); a 30-day comment period ensues upon publication in the periodic bulletin.

☐ **\_ \_ FEA-FONSI** Submit the proposing agency notice of determination/transmittal on agency letterhead, a hard copy of the FEA, an OEQC publication form, along with an electronic word processing summary and a PDF copy (send both summary and PDF to [oeqchawaii@doh.hawaii.gov](mailto:oeqchawaii@doh.hawaii.gov)); no comment period ensues upon publication in the periodic bulletin.

☐ **\_ \_ FEA-EISPN** Submit the proposing agency notice of determination/transmittal on agency letterhead, a hard copy of the FEA, an OEQC publication form, along with an electronic word processing summary and PDF copy (you may send both summary and PDF to [oeqchawaii@doh.hawaii.gov](mailto:oeqchawaii@doh.hawaii.gov)); a 30-day consultation period ensues upon publication in the periodic bulletin.

☐ **\_ \_ Act 172-12 EISPN** Submit the proposing agency notice of determination on agency letterhead, an OEQC publication form, and an electronic word processing summary (you may send the summary to [oeqchawaii@doh.hawaii.gov](mailto:oeqchawaii@doh.hawaii.gov)). NO environmental assessment is required and a 30-day consultation period upon publication in the periodic bulletin.

☐ **\_ \_ DEIS** The proposing agency simultaneously transmits to both the OEQC and the accepting authority, a hard copy of the DEIS, a completed OEQC publication form, a distribution list, along with an electronic word processing summary and PDF copy of the DEIS (you may send both the summary and PDF to [oeqchawaii@doh.hawaii.gov](mailto:oeqchawaii@doh.hawaii.gov)); a 45-day comment period ensues upon publication in the periodic bulletin.

☐ **\_ \_ FEIS** The proposing agency simultaneously transmits to both the OEQC and the accepting authority, a hard copy of the FEIS, a completed OEQC publication form, a distribution list, along with an electronic word processing summary and PDF copy of the FEIS (you may send both the summary and PDF to [oeqchawaii@doh.hawaii.gov](mailto:oeqchawaii@doh.hawaii.gov)); no comment period ensues upon publication in the periodic bulletin.

☐ **\_ \_ Section 11-200-23 Determination** The accepting authority simultaneously transmits its determination of acceptance or nonacceptance (pursuant to Section 11-200-23, HAR) of the FEIS to both OEQC and the proposing agency. No comment period ensues upon publication in the periodic bulletin.

☐ **\_ \_ Section 11-200-27 Determination** The accepting authority simultaneously transmits its notice to both the proposing agency and the OEQC that it has reviewed (pursuant to Section 11-200-27, HAR) the previously



accepted FEIS and determines that a supplemental EIS is not required. No EA is required and no comment period ensues upon publication in the periodic bulletin.

\_\_\_Withdrawal (explain)

**Summary** (Provide proposed action and purpose/need in less than 200 words. Please keep the summary brief and on this one page):

The Hana Landfill is comprised of two (2) sections separated by Waikoloa Road. The active Hana Landfill is located on approximately 13.2 acres landward (mauka) of Waikoloa Road while the original dump site (Makai Hana Landfill) is located on approximately 6.4 acres seaward (makai) of Waikoloa Road. The Makai Hana Landfill is located within the State Land Use "Conservation" District.

To bring the Makai Hana Landfill into compliance with Federal and State Department of Health regulations, the Department of Environmental Management proposes to remove approximately 90,000 cubic yards (c.y.) of waste and haul it across Waikoloa Road to the active Hana Landfill. Materials that can be recycled or reused will be handled accordingly.

The removal of waste will occur over a period of three (3) years using County resources and personnel or contractors. The waste excavation and removal will be conducted in a series of small stages in order to minimize the area of exposed waste. Each stage will include removal of vegetation and cover soil, excavation of waste, removal of recyclable scrap metal, and hauling waste to the active landfill for disposal. After all refuse has been removed, the site will be graded, erosion controls will be installed, and the site will be planted with an appropriate mixture of grasses.

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# **Draft Environmental Assessment**

## **PROPOSED MAKAI HANA LANDFILL CLEAN-UP AND CLOSURE (TMK (2) 1-3-006:012(por.) and 007(por.))**

**Prepared for:**

**County of Maui,  
Department of Environmental Management**

**July 2015**

**Copyright © 2015,  
by Munekiyo Hiraga**



**MUNEKIYO HIRAGA**

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## **List of Acronyms**

AFNSI	Anticipated Finding of No Significant Impact
AIS	Archaeological Inventory Survey
ALISH	Agricultural Lands of Importance to the State of Hawaii
AMSL	Above Mean Sea Level
BLNR	Board of Land and Natural Resources
BMP	Best Management Practice
CDUA	Conservation District Use Application
CDUP	Conservation District Use Permit
CFR	Code of Federal Regulations
CIA	Cultural Impact Assessment
CM/SEC	Centimeters per Second
C.Y.	Cubic Yards
DA	U. S. Department of the Army
DEM	Department of Environmental Management
DLNR	Department of Land and Natural Resources
DOE	Department of Education
DOH	Department of Health
DWS	Department of Water Supply
EA	Environmental Assessment
EAL	Environmental Action Level
EIS	Environmental Impact Statement
EO	Executive Order
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Map
FONSI	Findings of No Significant Impact
HAR	Hawaii Administrative Rules
HDOT	Hawaii Department of Transportation (also see SDOT)
HRS	Hawaii Revised Statutes
HSA	Hawaii Stream Assessment
ISWMP	Integrated Solid Waste Management Plan
IWS	Individual Wastewater System
LSB	Land Study Bureau
MCC	Maui County Code
MECO	Maui Electric Company, Ltd.
MIP	Maui Island Plan

MPD	Maui Police Department
MSL	Mean Sea Level
MSW	Municipal Solid Waste
MSWLF	Municipal Solid Waste Landfill
NRCS	Natural Resources Conservation Service
NPDES	National Pollutant Discharge Elimination System
OCCL	Office of Conservation and Coastal Lands
OEQC	Office of Environmental Quality Control
RGB	Rural Growth Boundary
rLW	Lava flow, aa
SDOT	State Department of Transportation
SDWB	Safe Drinking Water Branch, Department of Health
SHPD	State Historic Preservation Division
SLUC	State Land Use Commission
SMA	Special Management Area
STB	Small Town Boundary
SUP	State Special Use Permit
UGB	Urban Growth Boundary
USACE	U. S. Army Corps of Engineers
USDA	U. S. Department of Agriculture
USFWS	U. S. Fish and Wildlife Service
USGS	U. S. Geological Survey

## **Executive Summary**

<b>Project Name:</b>	Proposed Makai Hana Landfill Clean-Up and Closure
<b>Type of Document:</b>	Draft Environmental Assessment
<b>Legal Authority:</b>	Chapter 343, Hawaii Revised Statutes
<b>Anticipated Determination:</b>	Anticipated Finding of No Significant Impact
<b>Applicable Environmental Assessment review “Trigger”:</b>	<ul style="list-style-type: none"><li>a. Use of State Lands and County Funds</li><li>b. Work in the Conservation District</li></ul>
<b>Location:</b>	TMK: (2) 1-3-006:012(por.) and 007(por.) Hana Maui Island
<b>Applicant:</b>	County of Maui, Department of Environmental Management
<b>Proposing and Determination Agency and Accepting Authority:</b>	County of Maui Department of Environmental Management 2050 Main Street, Suite 1C Wailuku, Hawaii 96793 Contact: Kyle Ginoza, Director Phone: (808) 270-5798
<b>Consultant:</b>	Munekiyo Hiraga 305 High Street, Suite 104 Wailuku, Hawaii 96793 Contact: Colleen Suyama Phone: (808) 244-2015
<b>Project Summary:</b>	The Hana Landfill is comprised of two (2) sections (collectively referred to as Hana Landfill). The currently active Hana Landfill area is located on the west side (mauka side) of Waikoloa Road. The active landfill area covers an area of approximately 13.2 acres and lies within the State Land Use “Agricultural” District. The original dump area (Makai Hana Landfill) is located on the east side (makai side) of

Waikoloa Road and has not been used for a number of years. The Makai Hana Landfill covers an area of approximately 6.4 acres and lies in the State Land Use “Conservation” District. The Hana Landfill is also located in the County of Maui’s Special Management Area.

After all disposal activities in the Makai Hana Landfill were discontinued around 2003, most waste was covered with soil, although some areas of green waste were left without cover and allowed to decompose. Scrap metal was removed for recycling. Over time, most of the Makai Hana Landfill area became covered with natural vegetation ranging from grass to heavy brush.

To bring the Makai Hana Landfill area into compliance with Federal and State regulations, in March 2014, the County of Maui conducted a subsurface investigation to determine and document the limits, depth, and volume of the waste that was placed in the Makai Hana Landfill. The investigation mapped the limits of the Makai Hana Landfill area and estimated the volume of waste to be approximately 89,200 cubic yards and an additional 10,300 cubic yards of clean soil would need to be excavated. The County of Maui, DEM proposes a clean closure which will involve removal of all the waste from the Makai Hana Landfill and the transfer of removed waste across Waikoloa Road to the active Hana Landfill area. Scrap metal will be set aside for hauling to a recycling facility.



# **I. PROJECT OVERVIEW**

# I. PROJECT OVERVIEW

## A. BACKGROUND

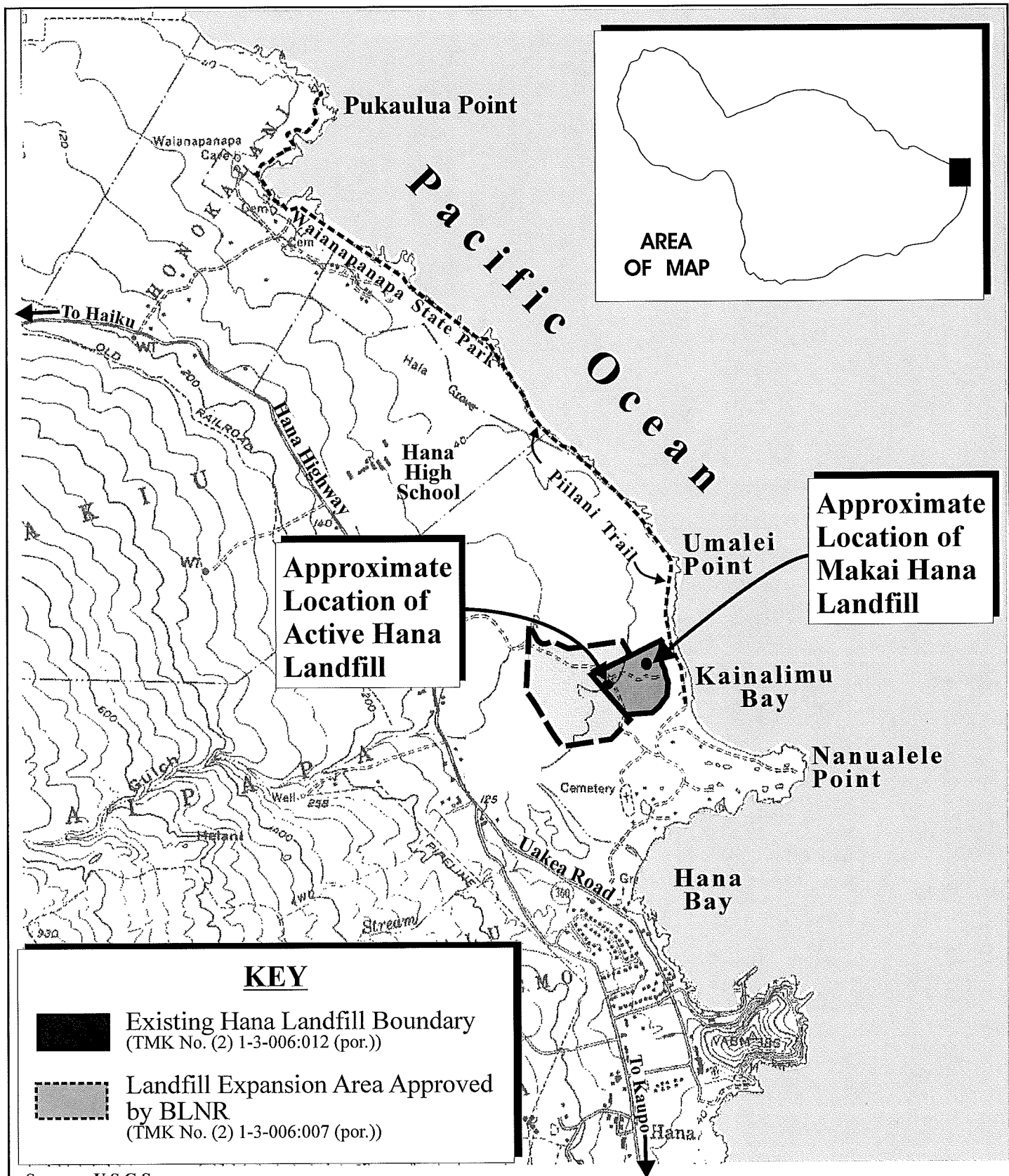
The County of Maui, Department of Environmental Management (DEM), Solid Waste Division, seeks to close the original dump area located on the east side of the active Hana Landfill (hereafter referred to as the “Makai Hana Landfill”), located in Hana, Maui, identified by Tax Map Key 1-3-006:012 (por.) (Parcel 12). See **Figure 1** and **Figure 2**. Access to the landfill site is provided by Waikoloa Road via Hana Highway.

In 1969, the State Board of Land and Natural Resources (BLNR) approved a right-of-entry in favor of the County of Maui to utilize a portion of Parcel 12, approximately 29.05 acres in area along with a 20-ft. wide road easement, for a garbage dump site. Since 1969, the Hana Landfill has served as the sole disposal and recycling facility for the districts of Keanae, Nahiku, Hana, Kipahulu, and Kaupo. In 1984, the BLNR approved a request for issuance of an Executive Order (EO) placing the control and management of the portion of Parcel 12 to the County of Maui. See **Appendix “A”**. The remaining portion of Parcel 12 is a strip of land, approximately 250 ft. in width, between the eastern boundary of the landfill site and the Hana coastline. This State-owned portion of Parcel 12 is excluded from the right-of-entry and subsequent Executive Order. Refer to **Figure 2**.

The State-owned portion of Parcel 12 and the eastern portion of the County landfill parcel (covered under the 1984 EO) are located within the State Land Use Conservation District. The remaining portion of Parcel 12 is located in the State Land Use Agricultural District. See **Figure 3**.

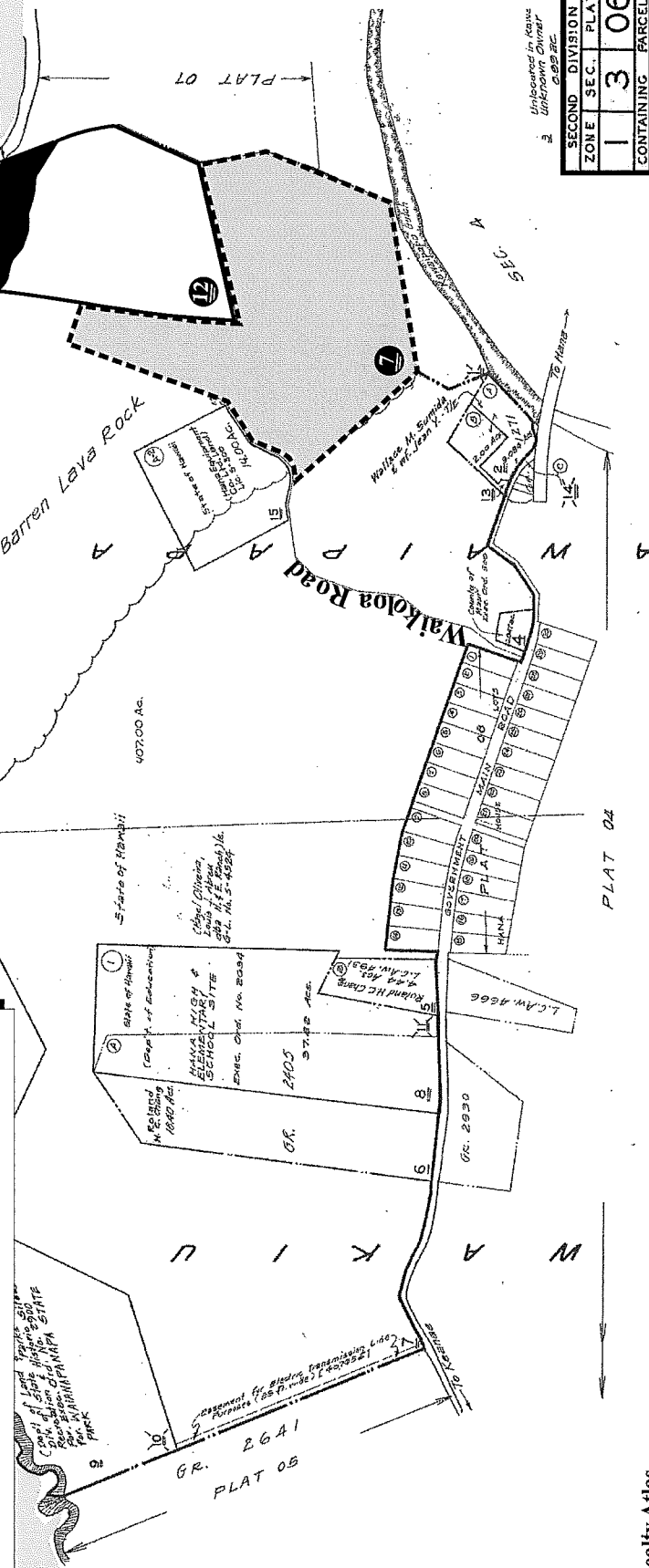
Landfill operations up to the early 2000’s were carried out in the area east or makai of Waikoloa Road in the portion of land in the Conservation district. Waste disposed in the Makai Hana Landfill included municipal solid waste, green waste, construction and demolition waste, and scrap metal, including old automobiles. Around 2003, the Makai Hana Landfill operations were closed. The portion of Parcel 12 lying west of Waikoloa Road outside the Conservation District continued to receive waste. This area is still in use and is the area of the current active landfill operations. Refer to **Figure 3**.

In 2007 due to encroachment of the landfill operations beyond Parcel 12 and into the adjacent State lands identified by TMK (2) 1-3-006:007 (por.) (Parcel 7), the DEM initiated land acquisition proceedings with the State Department of Land and Natural Resources (DLNR) to integrate an approximate 45.14-acre area, including the landfill



# Pacific Ocean

- Landfill Expansion Area Approved  
by BLNR  
(TMK No. (2) 1-3-006:007 (por.))



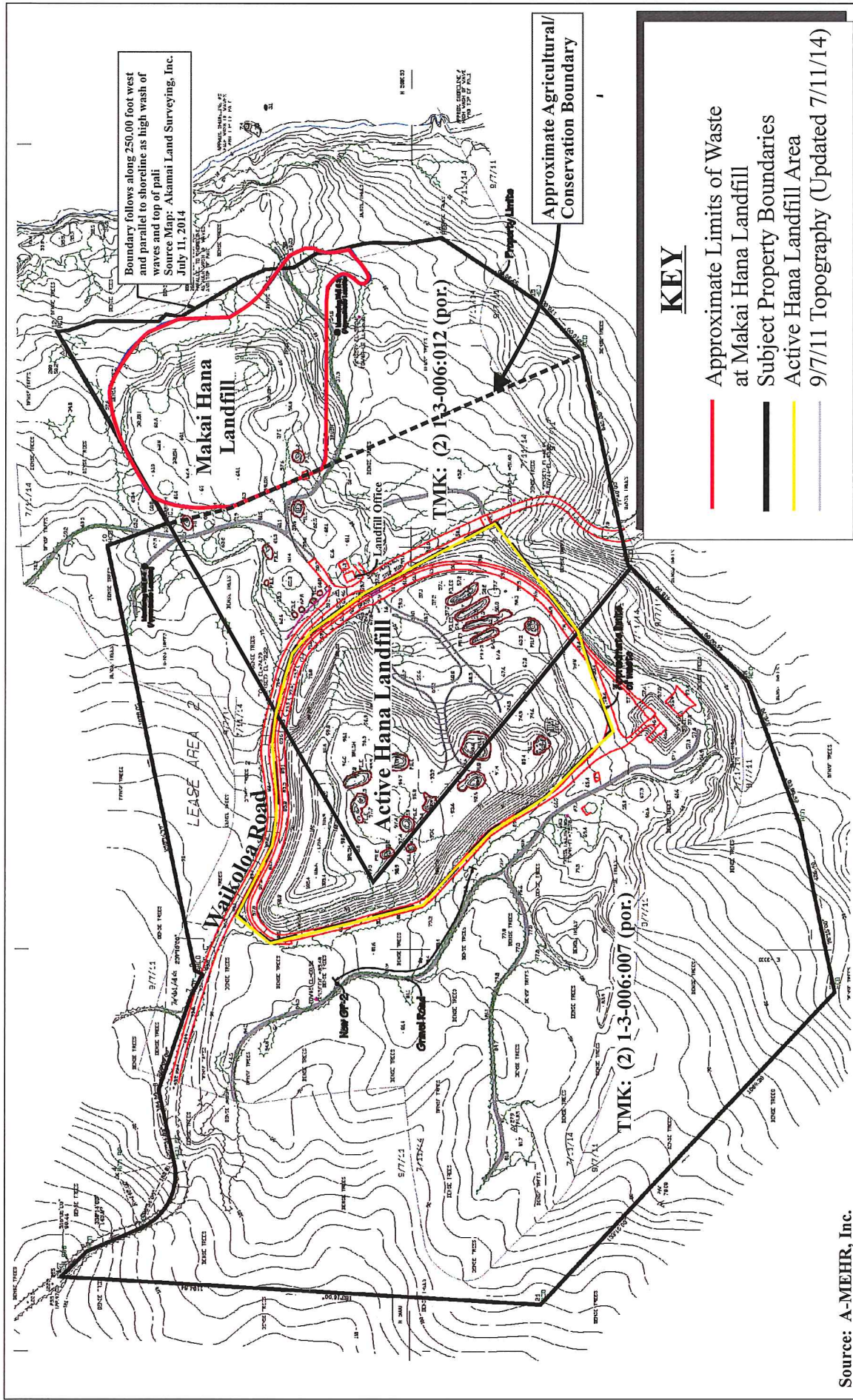
**Figure 2 Proposed Makai Hana Landfill Clean-Up and Closure**  
**Site Location Map**

**Prepared for: County of Maui, Department of  
Environmental Management**



**MUNEKIYO HIRAGA**





**Figure 3 Proposed Makai Hana Landfill Clean-Up and Closure Site Plan**



Prepared for: County of Maui, Department of Environmental Management





encroachment, buffer zone and environmental monitoring areas, into the existing landfill site. Refer to **Figure 2**. A Chapter 343, Hawaii Revised Statutes (HRS) Final Environmental Assessment (EA) was published in the Environmental Notice on December 8, 2007 for the acquisition. The BLNR took action on May 13, 2011 approving the transfer of State land to the DEM. See **Appendix “A-1”**. The DEM is currently involved in final subdivision process for the transfer of the management and control of this 45.14-acre area by Executive Order.

## **B. PROPOSED ACTIONS**

The Hana Landfill is comprised of two (2) sections. Refer to **Figure 3**. The currently active Hana Landfill area is located on the west side (mauka side) of Waikoloa Road. The active landfill area covers an area of approximately 13.2 acres and lies within the State Land Use “Agricultural” District. The original dump area (Makai Hana Landfill) is located on the east side (makai side) of Waikoloa Road and has not been used for a number of years. The Makai Hana Landfill covers an area of approximately 6.4 acres and lies in the State Land Use “Conservation” District. The Hana Landfill is also located in the County of Maui’s Special Management Area.

After all disposal activities at the Makai Hana Landfill were discontinued around 2003, most waste was covered with soil, although some areas of green waste were left without cover and allowed to decompose. Scrap metal was removed for recycling. Over time, most of the Makai Hana Landfill area became covered with natural vegetation ranging from grass to heavy brush.

The proposed action is necessary to comply with Title 40 of the Code of Federal Regulations (CFR), which sets forth minimum national criteria under the Resource Conservation and Recovery Act, for all municipal solid waste landfill (MSWLF) units and under the Clean Water Act. All MSWLF units that receive waste on or after October 9, 1993 are required to meet the provision of Title 40 which in the case of the Makai Hana Landfill includes clean-up and removal or lining and covering the municipal solid waste (MSW) deposited at the Makai Hana Landfill from 1993 (effective date of CFR 40) to 2003. CFR 40 regulations are mirrored in the State of Hawaii, Hawaii Administrative Rules (HAR) Title 11-58.1-17 which have also been approved by the US Environmental Protection Agency and authorizes the State of Hawaii Department of Health (DOH) to review and approve closure activities under the HAR rules. As such, the CFR regulations are met through compliance with the HAR Title 11-58.1-17.

Hawaii solid waste regulations (HAR 11-58.1-17) establishes that owners or operators of all MSWLF units must install a final cover system that is designed to minimize

infiltration and erosion. The final cover system must be comprised of an erosion layer underlain by an infiltration layer as follows:

- a. Have a permeability less than or equal to the permeability of any bottom liner system or natural subsoils present, or a permeability no greater than  $1 \times 10^{-5}$  cm/sec, whichever is less, and
- b. Minimize infiltration through the closed MSWLF by the use of an infiltration layer that contains a minimum 18 inches of earthen material, and
- c. Minimize erosion of the final cover by the use of an erosion layer that contains a minimum six (6) inches of earthen material that is capable of sustaining native plant growth.

To bring the Makai Hana Landfill area into compliance with Federal and State regulations, in March 2014, the County of Maui conducted a subsurface investigation to determine and document the limits, depth, and volume of the waste that was placed in the Makai Hana Landfill during those years it was in active use. See **Appendix "B"**. The investigation mapped the limits of the Makai Hana Landfill area, and estimated the volume of waste to be approximately 89,200 cubic yards (c.y.) and an additional 10,300 c.y. of clean soil would need to be excavated. Rather than closure in place which would require placement of a soil cap and engineered drainage facilities, as per a, b, and c above, the County of Maui, DEM proposes a clean closure which will involve removal of all the waste from the Makai Hana Landfill and transfer of removed waste across Waikoloa Road to the active Hana Landfill area. Scrap metal will be set aside for hauling to a recycling facility.

The clean closure of the Makai Hana Landfill will involve the following procedures (Refer to **Appendix "B"**).

**1. Removal Protocol**

- a. Survey and stake the limits of waste.
- b. Clear and grub vegetation from an area phased for waste removal. In order to minimize erosion, the disturbed area should be limited to the limits of each phase of removal.
- c. Strip existing cover soil to expose refuse, and stockpile the soil for any fill required subsequently for grading purposes, with any excess made

available for use as daily cover in the active Hana Landfill.

- d. Excavate refuse to expose clean native soil, and haul refuse to a process area or the active landfill.
- e. If significant refuse is found at the surveyed limits of waste, expand the excavated area until all refuse has been removed.
- f. Process the refuse as follows:
  - (1) Remove large metal items to a scrap metal stockpile for transport to an appropriate licensed scrap metal dealer.
  - (2) Remove abandoned automobiles buried in gullies at the southeast corner of the site. As they are removed, additional excavation will be conducted to ensure that all vehicles are removed and that the area is excavated to the approximate original grades.
  - (3) Remove any large wood items including stumps or logs to a separate stockpile. Depending on the character and quantity of these materials they may either be processed or disposed in the active Hana Landfill.
  - (4) Depending on conditions, remove other items or materials that can be readily separated for recycling. This may include concentrated volumes of clean green waste.
  - (5) Transfer the remaining refuse to the active Hana landfill for disposal.

## **2. Post Removal Soil Testing**

- a. After all refuse has been excavated from an area, soil samples will be collected from the exposed subgrade, and tested to determine compliance with Department of Health (DOH) Environmental Action Levels (EALs). In addition, samples will be collected from native soils in areas hydrogeologically upgradient from the landfill, to determine background levels of any chemical constituents detected in subgrade soil within the landfill footprint. Any areas where subgrade levels with soil constituents exceeding EALs and background concentrations will be further excavated to expose bedrock or to soils that test within background concentrations. Refer to **Appendix "B"** for additional detail regarding soil sampling and

testing program.

- b. No area of exposed subgrade will be backfilled, covered with soil or revegetated until testing has demonstrated soil contaminant levels are below EAL values.
- c. Survey the disturbed area and prepare an as-built drawing of the excavated conditions, including any encroachment beyond permitted site boundaries.
- d. Grade the site to achieve a relatively uniform slope, using stockpiled cover soil as needed to fill any low spots that would collect runoff.
- e. Install erosion controls and plant the site to an appropriate grass mixture.

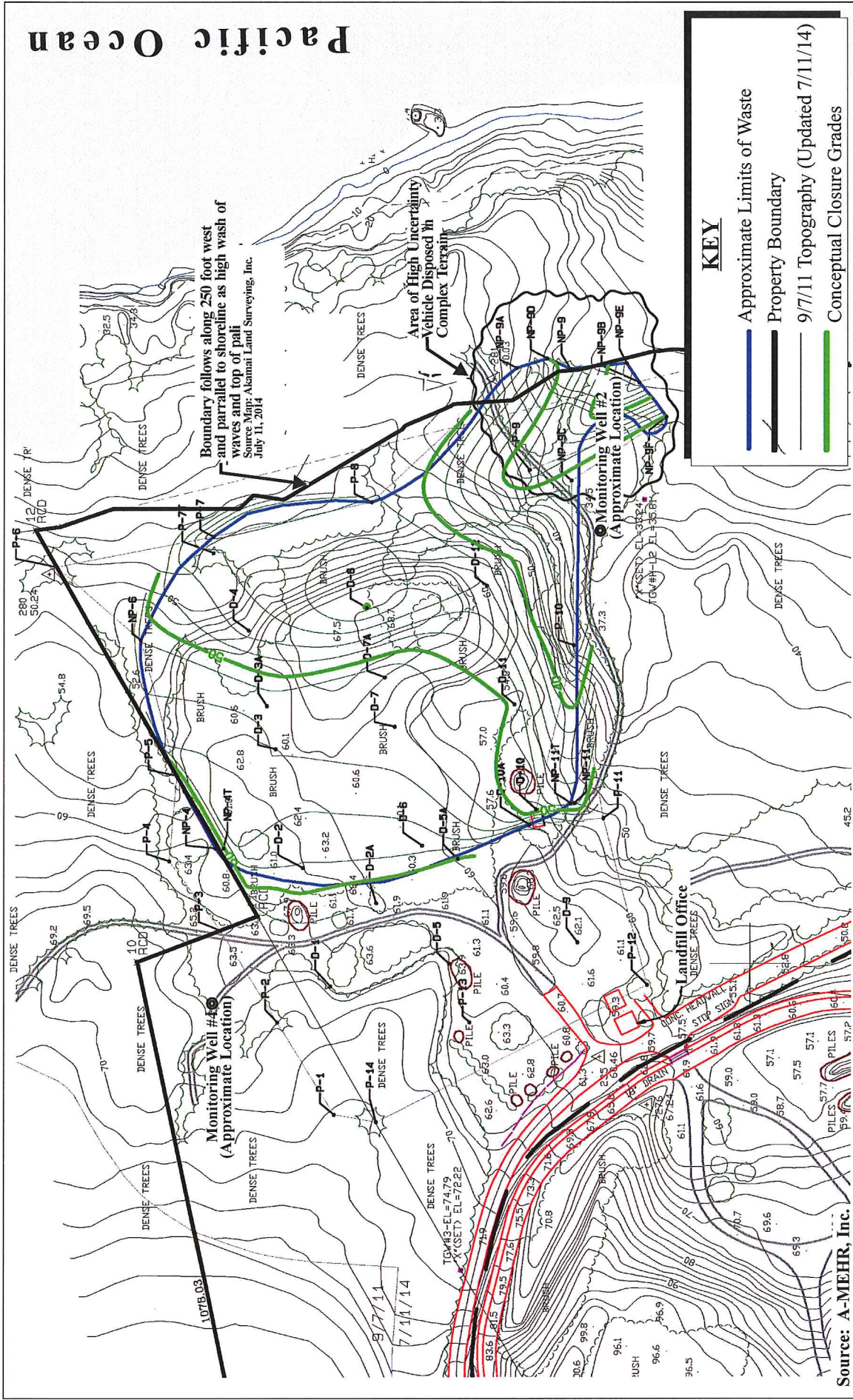
The removal of waste will occur over a period of three (3) years using County resources and personnel or contractors. The waste excavation and removal will be conducted in a series of small stages in order to minimize the area of exposed waste. Each stage will include removal of vegetation and cover soil, excavation of waste, removal of recyclable scrap metal, and hauling waste to the active landfill for disposal. After all refuse has been removed, the site will be graded, erosion controls will be installed, and the site will be planted with an appropriate mixture of grasses and retained, to the extent possible, in its pre-landfill restored topographical condition. See **Figure 4**.

## **C. REQUIRED LAND USE ENTITLEMENTS**

The DEM has been in coordination with the DOH, Solid and Hazardous Waste Branch, regarding closure of the Makai Hana Landfill. DOH is currently reviewing the proposed closure plan for the Makai Hana Landfill (refer to **Appendix “B”**). The DEM has also been in coordination with the Office of Conservation and Coastal Lands (OCCL) to seek concurrence and define applicable regulatory requirements pertaining to a Conservation District Use Permit (CDUP) for the proposed removal of the municipal waste located within the Conservation District. Further, the Makai Hana Landfill is located in the Special Management Area (SMA). Coordination with the County of Maui, Department of Planning has determined that a SMA Assessment application will need to be processed for the implementation of the closure plan.

## **D. MAKAI LANDFILL ENCROACHMENT**

Two (2) areas of potential encroachment in the east and north boundaries of the Makai Hana Landfill were identified during the field investigation for the closure plan. Refer to **Appendix “B”** and **Figure 4**. Each of these encroachments is discussed below.



**Figure 4 Proposed Makai Hana Landfill Clean-Up and Closure**

**Conceptual Closure Final Grades**





1. **East Boundary Encroachment**

The easterly boundary of the Makai Hana Landfill is defined in the 1984 EO as a meandering line “250.00 feet west and parallel to high water mark at seashore”, referring to the shoreline of Kainalimu Bay. The waste limits as determined in the field investigation indicates that a small area in the southeast part of the site encroaches beyond the site boundary by approximately 30 feet. Refer to **Figure 4**.

2. **North Boundary Encroachment**

**Figure 4** also shows the north site boundary of the limits of waste. The area was defined in relation to the test pits used to determine the extent of waste in the area. Three (3) test pits near the boundary (P-4, NP-4, and P-5) were excavated to identify evidence of waste. Point P-4, the originally staked position, was located approximately 60 feet outside the site boundary based on previous County estimates of encroachment into the Conservation district. Excavation at that location found no waste. Additional test pits and trenching established the waste limits to be located within a few feet of the site boundary.

Based on the data and field observations carried out to define the limits of waste, it is estimated that any encroachment of waste into the Conservation District that is outside the boundaries granted by the 1984 EO for waste disposal is, at most, confined to a very small area. The proposed clean closure will include location of waste limits around the entire site perimeter. After completion of excavation, the limits adjacent to the site boundary will be surveyed to identify any areas of encroachment beyond the originally permitted landfill boundaries. In consultation with the OCCL, such areas, if any, will be restored to conditions acceptable to the DLNR.

E. **CHAPTER 343, HAWAII REVISED STATUTES (HRS)**  
**REGULATORY CONTEXT**

The project involves the use of land owned by the State of Hawaii, County of Maui funding and use within the Conservation District, which are all triggers requiring the processing of an EA pursuant to Chapter 343, HRS and Section 11-200-6, Hawaii Administrative Rules (HAR), Environmental Impact Statement Rules.

This EA has been prepared to address the proposed closure of the Makai Hana Landfill’s technical characteristics, environmental impacts and alternatives, and advances findings and conclusions relative to the significance of the overall action. The County of Maui,

DEM will be the proposing and determination agency for the EA. The Mayor of the County of Maui has also designated DEM as the accepting authority.

The EA will be the primary technical supporting document for the SMA and CDUP applications for the proposed action.

## **II. AFFECTED ENVIRONMENT, POTENTIAL IMPACTS AND MITIGATION MEASURES**

## **II. AFFECTED ENVIRONMENT, POTENTIAL IMPACTS AND MITIGATION MEASURES**

### **A. PHYSICAL ENVIRONMENT**

#### **1. Surrounding Land Uses**

##### **a. Existing Conditions**

The project site is located north of Hana Bay and accessed by Waikoloa Road via Hana Highway. The State of Hawaii owns the adjacent property to the north and west of the project site, identified by TMK (2)1-3-006:007 (Parcel 7). The State parcel is approximately 407 acres in size. A preliminary subdivision of Parcel 7 has been approved to create a separate parcel for the 45.14-acre lot to be transferred to the County for the Hana Landfill. There is one (1) lease over the area to Lloyd Abreu for cattle grazing. The parcel to the south of the subject property is currently vacant, owned by Keola Hana Maui, Inc. East of the project site is Kainalimu Bay and the Pacific Ocean.

The remaining portion of Parcel 12, between the landfill and shoreline, is owned by the State and is a conservation buffer and includes the Piilani Trail, a historic foot trail along the coastline.

##### **b. Potential Impacts and Mitigation Measures**

The Hana Landfill has been utilized by the County for solid waste disposal since 1969. The proposed project involves the clean-up of an approximate 6.4 acre area in the Conservation District which was used for waste disposal. The proposed project is not anticipated to result in adverse impacts to surrounding land uses in the project vicinity. The additional 45.14 acres of buffer area around the landfill will further mitigate adverse potential impacts to surrounding land uses. The clean-up of the Hana Landfill makai side (Makai Hana Landfill) and disposal of the municipal solid waste to the current active Hana Landfill site is not anticipated to adversely impact the character of the neighborhood nor surrounding land uses.

The purpose of the proposed action is to bring the landfill into compliance with applicable Federal and State regulations. Upon the removal of all solid waste in the Makai Hana Landfill area the site would be restored to its approximate pre-waste disposal topographic condition. The excavated area will be vegetated to stabilize soil and mitigate stormwater runoff.

## **2. Climate**

### **a. Existing Conditions**

Like most areas of Hawaii, Hana's climate is relatively uniform year-round. Hana's tropical latitude, its position relative to storm tracts and the Pacific anticyclone, and the surrounding ocean combine to produce this stable climate. Variations in climate among different regions, then, is largely left to local terrain.

Average temperatures in Hana range between 63 degrees and 84 degrees Fahrenheit. August is historically the warmest month, while January and February are the coolest (County of Maui, Office of Economic Development, 2013).

Rainfall in Hana is highly seasonal, with most precipitation occurring between October and April when winter storms hit the area. Situated on the leeward side of Haleakala, this region receives most of its rainfall in late afternoon and early evening, after seabreezes take moisture upslope during the day. Precipitation data collected in the region indicate the project site receives approximately 70 to 75 inches of rain a year.

Wind patterns in the Hana area are also seasonal. The northeasterly tradewind occurs 90 percent of the time during the summer, and just 50 percent of the time in the winter. Wind patterns also vary on a daily basis, with tradewinds generally being stronger in the afternoon. During the day, winds blow onshore toward the warmer land mass. In the evening, the reverse occurs, as breezes blow toward the relatively warm ocean.

### **b. Potential Impacts and Mitigation Measures**

The existing landfill operations and clean-up of the Makai Hana Landfill are not anticipated to adversely impact climatic conditions.

### 3. Topography and Soils

#### a. Existing Conditions

The U.S. Department of Agriculture Natural Resources Conservation Service (formerly Soil Conservation Service) designates various associations on the island of Maui and classifies the soil in its *Soil Survey of Islands of Kauai, Oahu, Maui, Molokai, and Lanai*. The project site is located within the Hana-Makaalae-Kailua association. See **Figure 5**. This area contains moderately deep and deep, gently sloping to steep, well-drained soils. The texture ranges from moderately fine to fine subsoils. Lava flows, aa (rLW) underly the project site, consisting of geologically recent lava flows. See **Figure 6**. The flows are a mass of clinkery, hard, glassy, sharp pieces of lava, making the land difficult to traverse. This miscellaneous land type is often used for water supply, wildlife habitat, and recreation (U.S. Department of Agriculture Natural Resources Conservation Service).

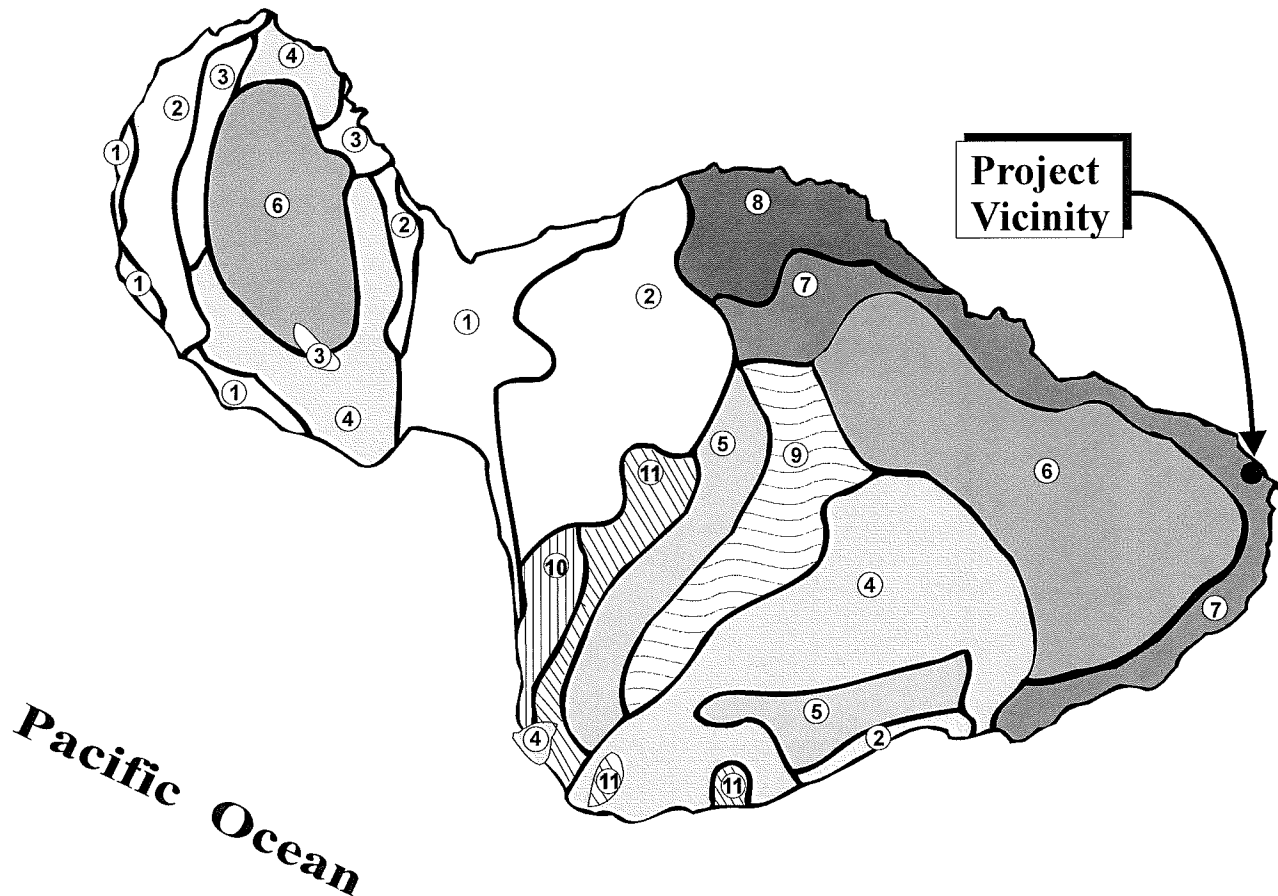
Topography underlying the landfill slopes gently in a west to east direction, and is not subject to landslides or other types of mass movement. Natural elevations in Parcel 12 range from 63 feet to 30 feet above mean sea level (amsl).

#### b. Potential Impacts and Mitigation Measures

The proposed project will excavate a total of approximately 89,200 c.y. of municipal solid waste and approximately 10,300 c.y. of soil from the Makai Hana Landfill. Grading and excavation activities associated with the clean-up will be completed in accordance with Chapter 20.08, Soil Erosion and Sedimentation Control of the Maui County Code and the permit requirements of the State of Hawaii, Department of Health (DOH) and the National Pollutant Discharge Elimination System (NPDES). The clean-up will be carried out in phases over a number of years. Upon completion of each phase of the clean-up activities, the phased clean-up area will be restored to its approximate pre-existing topographical conditions. The area of alteration will be limited to each phase of operations and eventually cover an approximate 6.4 acre land area. In general, adverse impacts to topography and soil conditions in the area of the Makai Hana Landfill site are not anticipated as a result of solid waste clean-up.

# LEGEND

- |  |                                     |
|--|-------------------------------------|
| ① Pulehu-Ewa-Jaucas association                | ⑦ Hana-Makaalae-Kailua association  |
| ② Waiakoa-Keahua-Molokai association           | ⑧ Pauwela-Haiku association         |
| ③ Honolua-Olelo association                    | ⑨ Laumaia-Kaipoi-Olinda association |
| ④ Rock land-Rough mountainous land association | ⑩ Keawakapu-Makena association      |
| ⑤ Puu Pa-Kula-Pane association                 | ⑪ Kamaole-Oanapuka association      |
| ⑥ Hydrandepts-Tropaquods association           |                                     |



Source: U.S. Department of Agriculture, Natural Resources Conservation Service (formerly Soil Conservation Service)

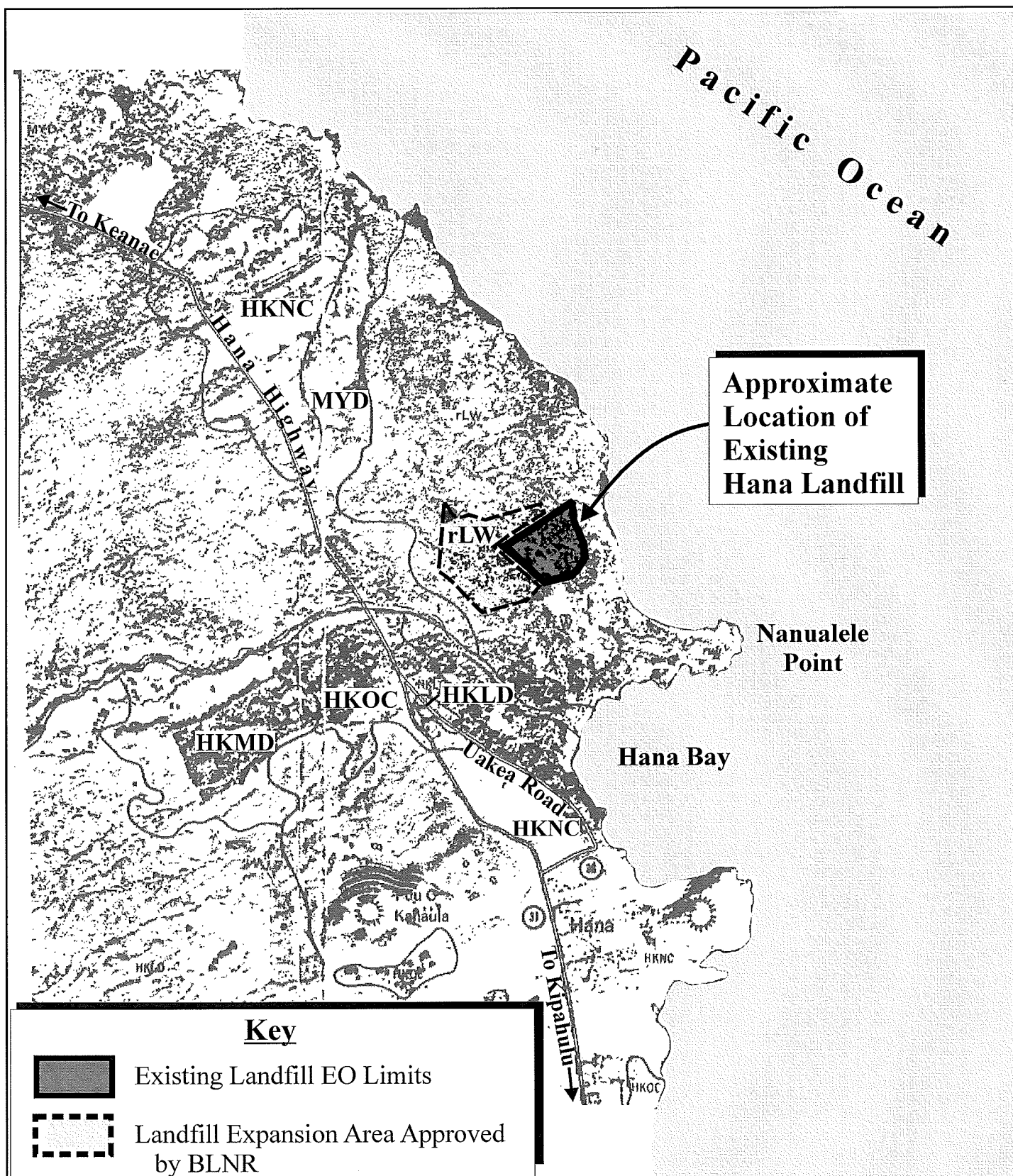
**Figure 5** Proposed Makai Hana Landfill  
Clean-Up and Closure  
Soil Association Map

NOT TO SCALE

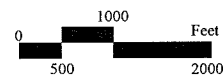


Prepared for: County of Maui, Department of  
Environmental Management

**MUNEKIYO HIRAGA**



Source: U.S. Department of Agriculture, Natural Resources Conservation Service (formerly Soil Conservation Service)



Prepared for: County of Maui, Department of Environmental Management

**MUNEKIYO HIRAGA**



The excavated municipal solid waste will be sorted for recyclable material and metals. The remaining municipal solid waste will be disposed at the existing active landfill area. There is sufficient capacity at the existing landfill to handle the approximately 89,200 c.y. of solid waste and 10,300 c.y of soil cover.

**4. Flood and Coastal Hazards**

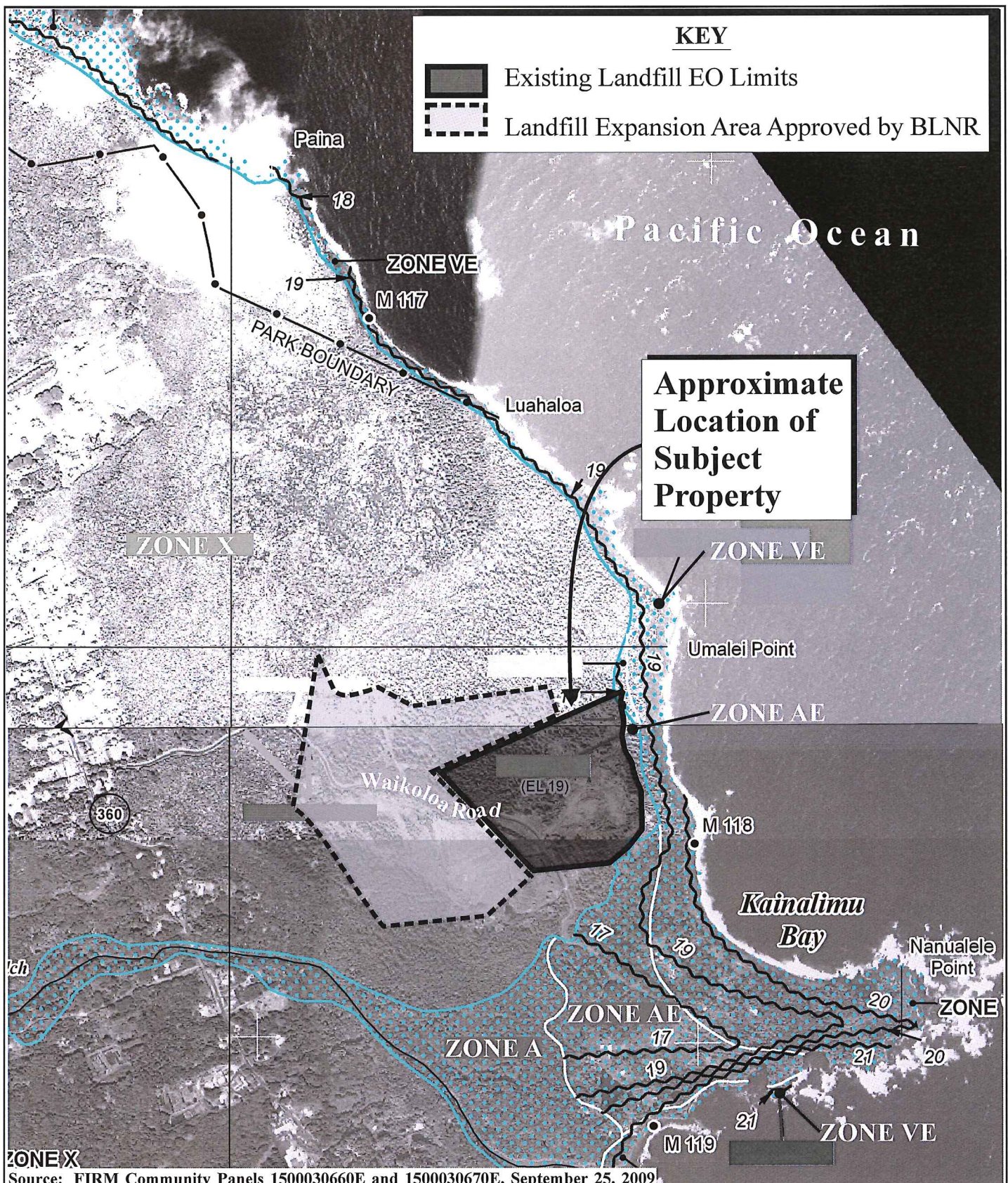
**a. Existing Conditions**

The Flood Insurance Rate Map (FIRM) (FIRM Community Panels 1500030660E and 1500030670E – September 25, 2009) for this region indicates that the majority of the landfill property is in Flood Zone X, an area of low flood risk and minimal flooding with no development restrictions. Two (2) small areas along the eastern boundary of the Makai Hana Landfill are in Flood Zone AE. Zone AE is a special flood hazard area subject to inundation by the one (1) percent annual chance flood with base flood elevation of approximately 17 feet. See **Figure 7**. The clean-up and landfill operations are in upland areas, located at elevations in excess of 20 feet amsl. The portion of Zone AE affected by the proposed action will be graded and vegetated to mitigate stormwater runoff. It is noted that the landfill clean-up and active landfill area are located beyond the reaches of the tsunami inundation zone.

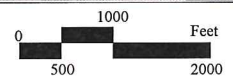
**b. Potential Impacts and Mitigation Measures**

All activity will be above the base flood elevation and beyond the reaches of the tsunami inundation zone. To ensure that potential adverse impacts associated with flooding are avoided, the DEM will grade the clean-up area site to achieve a relatively uniform slope, using stockpiled soil as needed to fill any low spots that would collect runoff. DEM will also install erosion control measures such as planting soil cover to prevent adverse soil erosion impacts.





**Figure 7** Proposed Makai Hana Landfill  
Clean-Up and Closure  
Flood Insurance Rate Map





## **5. Streams and Groundwater**

### **a. Existing Conditions**

There are no streams or wetlands located in the immediate vicinity of the subject property. According to topographical maps prepared by the United States Geographical Survey, the Kawaipapa Stream is located approximately 1,500 feet to the south and west of the landfill.

The Hawaii Stream Assessment, a Preliminary Appraisal of Hawaii's Stream Resources (HSA) was compiled by the State Department of Land and Natural Resources, Commission on Water Resource Management and represents a first step in the identification of streams and rivers with significant natural and cultural qualities which may be appropriate for protection. The HSA designates the Kawaipapa Stream as "interrupted", flowing year-round in upper portions, and intermittently at lower elevations. It also notes that the Kawaipapa Stream has moderate recreational resources related to swimming opportunities, and substantial cultural resources related to historic sites and taro cultivation. The basal groundwater underneath the landfill occurs in the Honomaunu formations. The aquifer beneath the landfill is part of the Kawaipapa System of the Hana sector (URS Corporation, September 2006).

### **b. Potential Impacts and Mitigation Measures**

There are no streams or wetlands located in the immediate vicinity of the Makai Hana Landfill project site. Nevertheless, Best Management Practices (BMPs) will be utilized during grading activities in order to prevent the contamination of the downstream environment of Kawaipapa Stream. In addition, groundwater monitoring and testing is undertaken by the DEM quarterly to ensure that landfill operations do not result in adverse impacts to downstream environments. Groundwater from the four (4) monitoring wells will continue to be sampled and analyzed for the Detection Monitoring Program monitoring parameters and submitted to DOH for review. Any required mitigation to groundwater quality will be carried out pursuant to DOH requirements.

After all refuse has been removed from the Makai Hana Landfill area, soil samples from the exposed subgrade will be collected and tested to determine compliance with DOH Environmental Action Levels (EALs).

Refer to **Appendix “B”**. Any areas where subgrade soil constituents exceed EALs will be further excavated to expose bedrock or soils that test within acceptable concentrations.

**6. Flora, Fauna and Avifauna**

**a. Existing Conditions**

The project area is heavily vegetated with lowland, windward, non-native forest except for cleared portions around the existing landfill. During a Flora and Fauna survey conducted by Robert Hobdy in November 2006, for the EA for the land acquisition to the landfill, the terrain of the property was placed into three categories: (1) forest; (2) landscape; and (3) landfill (Munekiyo & Hiraga, Inc., October 2007).

In the forest area, which covers the Makai Hana Landfill, the undeveloped portions of this property were described as disturbed, wet and a lowland forest dominated by non-native plant species, such as common ironwood, gunpowder tree, African tulip-tree, and star flower. There were a few native species scattered in the forest, such as hala, naupaka kahakai, kaunaoa pehu, and kakalaioa.

The active Hana Landfill area has received awards for its attractive landscape. Ornamental plants have been placed around the entrance, the load talley office, and along the road.

The active Hana Landfill area is a cleared and grubbed and largely barren ground and covered trash. The covered areas including the Makai Hana Landfill and the perimeters have an abundance of common weeds that have taken over the previously disturbed ground. The only native plant found here was the common uhaloa.

A total of 141 plant species were recorded during the survey. Of these, none were endemic only to Hawaii, while 10 species were indigenous to Hawaii and other Pacific Islands. These species were okupukupu, kakalaioa, kaunaoa pehu, moa, hala, kou, koali awahia, naupaka kahakai, and uhaloa.

**b. Potential Impacts and Mitigation Measures**

The flora and fauna survey reported that the vegetation throughout the project area is comprised mainly of non-native species with a few common native species scattered about. No Federally listed threatened or endangered species (USFWS, 1999) were found on the property, nor were any found that are candidates for such status. No special habitats were found. There is little botanical concern with regard to the property (Munekiyo & Hiraga, Inc., October 2007).

The Makai Hana Landfill area is described as wet and a lowland forest dominated by non-native species. During the clean-up operation, all vegetation along with the accumulated municipal solid waste will be removed and relocated to the active Hana Landfill site and the green waste compost area, as applicable. The exposed soil will be planted with a mixture of appropriate grass species to stabilize the soil from wind blown erosion.

**7. Archaeological Resources**

**a. Existing Conditions**

An archaeological assessment of the existing and future active expanded portions of the Hana Landfill site and adjacent State lands was carried out in September 2003. See **Appendix “C”**. The field assessment found no significant material culture remains during the inspection of the project area. In addition, no significant above-ground structural remains were noted in the adjacent area. Given the very rocky surface of the surrounding aa terrain, it does not appear likely that the immediate study area was substantially utilized by precontact Hawaiians or during the post-contact sugar and ranch eras. The level of previous disturbance from the grading and filling operations has likely eliminated any evidence of former land use on the project area.

For the Makai Hana Landfill clean-up and closure project, an archaeological assessment with subsurface testing was carried out in June 2015, around the perimeter of the limits of waste to assess potential impacts of the proposed action on historic properties. See **Appendix “C-1”**.

A pedestrian survey and fourteen (14) backhoe test excavations were utilized to assess subsurface conditions along the boundaries of the Makai Landfill site. Shallow fill deposits were found to overlay *a'a* lava clinker in sampled portions of the project area. There were no significant material culture remains located during the surface inspection and subsurface testing of accessible portions of the project area. The general area in the vicinity of the margin of the *Makai* Landfill appears to have been previously impacted by bulldozing activities.

**b. Potential Impacts and Mitigation Measures**

No significant cultural remains were identified by the archaeological assessment that was completed in 2003 on the landfill site. Based on the findings of the 2003 archaeological assessment, no further work or mitigation was recommended. In coordination with the State Historic Preservation Division (SHPD) an archaeological assessment with subsurface testing was prepared by Xamanek Researches, LLC. The 2015 archaeological assessment report did not identify any historic or cultural resources along the boundary of the Makai Hana Landfill. However, the report noted that given the near coastal location of the proposed removal and closure of the Makai Landfill site, as well as the fact that it was not possible to test within much of the physical footprint of the Makai Landfill, archaeological monitoring is recommended during initial earthmoving activities around the boundaries of the old landfill, and periodically when the operations are near the original land surface elevation. Given the extended time necessary for the proposed project, the archaeological assessment report further recommended that the project specific monitoring plan be developed with the input of the State Historic Preservation Division (SHPD) staff archaeologist for the Maui office. As may be necessary, an archaeological monitoring plan will be submitted to SHPD. Refer to **Appendix "C-1"**.

Upon removal of waste from the Makai Hana Landfill, the area will be used as a buffer zone and will not be further altered.

## **8. Cultural Impact Assessment**

### **a. Cultural Impact Assessment**

#### **(1) Historical Context**

##### **Pre-Contact**

The subject property is located within the Kawaipapa ahupuaa, part of the larger moku or district of Hana, which extends from Koolau to Kaupo. The Hana moku was noted for bountiful production of upland taro, bananas, yams, wakue, olana and awa (Handy, 1940). The Hana district is also distinguished by its rich cultural history. Hana's closeness to the island of Hawaii permitted frequent interaction between the two islands in times of war and peace. In pre-contact times, Hana was a desirable district to reside in due to its abundant agricultural resources and numerous coastal fishponds. The Hana district was also noted for its fine surfing, excellent supply of natural woods (used for crafting scaffolds and ladders) and having the best round, smooth stones used in slingshots.

Hana was also called "a land beloved by chiefs because of the fortress of Kauiki and the ease of living in that place". Kauiki, a puu located on the southern edge of Hana Bay, had a summit at a height of approximately 400 feet and was covered with a natural vegetative mat that provided the chiefs and chiefesses with a comfortable sleeping environment. Fishponds immediately below Kauiki provided unlimited fish supplies, while large quantities of awa root delighted the chiefs. Piilani, a high Maui Chief, was said to have resided at Kauiki.

Other notable figures of old Hawaii were known to have lived at Kauiki, including Kaahumanu, who was born and raised in the Kawaipapa ahupuaa. According to Handy, Lonopiilani and Kihapiilani (sons of Piilani) also resided at Kauiki. Lonopiilani was the older brother of Kihapiilani. Kihapiilani stayed at Kauiki with Lonopiilani until he apparently grew tired of his brother's continued insults. With the aid of a fleet of canoes sent by Umi, a high Chief from the island of Hawaii, Kihapiilani defeated

Lonopiilani and later extended his rule throughout the island of Maui.

As chief of Maui, Kihapiilani built the “Long Road”, or Alaloa around the island of Maui, around 1516 (Handy, 1940). The trail was paved with flat hard beach stones, bordered in the open country by large boulders sunk into the ground. Maui alii organized human chains to pass shoreline stones from the coast to the trail areas. The trail was useful during times of war, with runners carrying messages along the trails for the alii. The trail was also used during the Makahiki by tax collectors, the priests who released land from the kapu after the hookupu or taxes had been received and the bearers of the symbol of Lono. (Handy, Handy and Pukui, 1972). Eventually, the Maui trail would come to be known as the King’s Trail, the only island trail in Hawaii to traverse the whole island.

## **(2) Local Resident Interviews**

As part of the cultural impact assessment, an interview was conducted with Ms. Harolan Kaiwi of Hana on July 15, 2015. The following is a summary of this interview:

Ms. Harolen Kaiwi is of Hawaiian descent and was born in 1961 in Hana and is a life-long resident of Hana. She is the daughter of Harold and Helen Nakaoka. Her family connection to the Hana region is from Keanae and lower Nahiku. She has two (2) brothers who live in Kahului and three (3) sisters who are also Hana residents. She has a daughter and three (3) sons who are residents of Hana. Ms. Kaiwi worked for the Hotel Hana Maui for 30 years before moving to the Hana Ranch Grocery Store five (5) years ago to become one of the store’s managers.

Ms. Kaiwi is the President of the Hana Cultural Center and Museum, Vice President of the non-profit organization Ohana Makamae, and a member of the American Red Cross.



Her involvement with the Hana Cultural Center and Museum is due to her desire to learn and preserve the Hawaiian culture, as well as, her desire to educate her children and others in the culture. Ohana Makamae is Hana's family resource center that provides culturally based substance abuse treatment and family support.

Ms. Kaiwi recalls when she was growing up the old Hana Landfill was referred to by some members of the community as "Woolworths". Residents would carefully set aside usable items at the landfill for other Hana residents to pick-up and reuse. The landfill was like shopping at Woolworths. This practice ended before 1979 when she graduated from high school.

Waikoloa Road, besides being the access to the Hana Landfill, is also used for access to the shoreline. Residents continue to use the shoreline area for fishing and gathering of food, such as opihi. She is aware that the Piilani Trail is located along the shoreline and that there are numerous ways to get to the shoreline. Ms. Kaiwi noted that the operations at the Hana Landfill do not limit access to the shoreline.

Ms. Kaiwi also noted that nearby is an existing fishpond in the Keanini Point area that crosses the Kalalau property. Because access to the fishpond is through private property she does not use the fishpond.

Ms. Kaiwi felt the existing landfill is beautiful and the workers do a good job. She did not express any concerns regarding the proposed closure of the Makai Hana Landfill. She also did not note any ongoing cultural practices or issues associated within the landfill area.

**b. Cultural Impact Analysis**

The Hana district is noted as being significant from a historical and cultural perspective. However, lands in the vicinity of the project site have been significantly altered through landfill use. In addition,

archaeological field work, historical research and local resident interview indicate there are no historic properties or significant cultural or religious activities which will be adversely impacted by the proposed action.

9. **Air and Noise Quality**

a. **Existing Conditions**

The Hana Landfill is located in a rural area, absent of large developments and intensive air source contaminants. The Hana region is consistently exposed to trade winds, which contributes to excellent air quality in the region. Ambient noise levels are also influenced by the region's rural atmosphere.

In the vicinity of the Hana Landfill, air quality is impacted by dust generated from the ongoing deposits of solid waste, as well as odors generated by decomposing refuse material. Refuse deposits are covered daily with earthen material in an effort to mitigate the effect of decomposing odors. Ambient noise in the area is largely attributed to the daily operations associated with landfill activities, which includes use of trucks and bulldozers for spreading and covering waste material. Four (4) landfill gas monitoring probes are installed around the perimeter of the landfill to test for potential methane migration.

The Makai Hana Landfill area has a vegetative cover and does not generate wind blown dust.

b. **Potential Impacts and Mitigation Measures**

Short-term construction-related impacts associated with the grading and removal of soil cover and accumulated solid waste at the Makai Hana Landfill may cause dust and other air pollutant emissions. These impacts will be limited by the construction plan of excavating in small increments over a three-year period, with each area being closed and revegetated as the excavation is completed. Appropriate BMPs will be utilized during grading activities in order to mitigate the potential for adverse impacts to air quality and ambient noise levels. Given the location and use of BMPs, temporary effects associated with the grading and solid waste removal are not anticipated to present significant adverse impacts. Exposed surfaces will be re-planted as each increment of excavation and grading is completed in order to minimize wind blown dust. The dust generated by

soil cover over the removed municipal solid waste and noise generated by machinery at the active landfill are not anticipated to adversely impact surrounding properties, since the landfill site is located approximately 0.25 mile from the nearest residence.

**10. Use of Chemicals and Fertilizers**

**a. Existing Conditions**

Currently, no herbicides or pesticides are used at the landfill site.

**b. Potential Impacts and Mitigation Measures**

On a short term basis, herbicides and pesticides may be applied by a licensed operator to establish the vegetative ground cover to excavated surfaces at the Makai Hana Landfill. Once vegetative cover has been established herbicides and pesticides will not be applied to vegetated areas. As such, long-term significant adverse effects to surface, underground, and marine resources from these applications are not anticipated.

**B. SOCIO-ECONOMIC ENVIRONMENT**

**1. Population and Economy**

**a. Existing Conditions**

The Hana region includes Hana Town and the neighboring coastal communities of Keanae, Kipahulu, and Kaupo. Situated 55 miles east of the County seat in Wailuku, Hana Town serves as the major population center of the Hana area. The economy in Hana is primarily based on diversified agriculture, the visitor industry, government services and subsistence activities. Diversified agricultural activities include ranching, as well as the cultivation of taro and tropical fruits, flowers, and foliage. Businesses, government services and visitor accommodations are centered in Hana Town.

In 2000, the population of Hana was 1,867, while the population for the year 2010 was 2,290 (U.S. Census, 2010). By the year 2020, the baseline population of Hana is projected to increase to 2,743 (Maui County Planning Department, December 2012).

In 1990, there were approximately 680 jobs in the Hana region, while in the year 2000, there were approximately 840. By the year 2020, the baseline number of jobs in Hana is anticipated to be approximately 940 (County of Maui, June 2006).

**b. Potential Impacts and Mitigation Measures**

The proposed project involves the clean-up of an area of former municipal solid waste and placing the material in the current active landfill. The project will also include grading activities to remove soil associated with the removal of the waste. Implementation of the project will require commitment of financial resources over an approximate three (3) year period. Short-term beneficial impacts to the economy may result from the clean-up operations through labor and supply contract expenditures. No long-term adverse impacts to the region's economy and population are anticipated as a result of the proposed project.

**2. Traditional Beach and Mountain Access**

**a. Existing Conditions**

The Piilani Trail is located to the east of the project site along the Hana coastline. Access to the shoreline areas is provided by this historic trail. The Piilani Trail is not located within the existing boundary of the EO or the Makai Hana Landfill. Refer to **Figure 1**.

**b. Potential Impacts and Mitigation Measures**

Access to traditional beach and mountain trails, such as the Piilani Trail, are not anticipated to be adversely impacted by the proposed clean-up of the Makai Hana Landfill activities.

**C. PUBLIC SERVICES**

**1. Police and Fire Protection**

**a. Existing Conditions**

Headquartered in Wailuku, police protection service for the island of Maui is provided by the Maui Police Department, which includes Wailuku, Lahaina and Hana patrol districts. The Hana patrol division covers the area from Kailua to Kaupo, and is based out of the Hana Police Station,

located near the intersection of Hana Highway and Uakea Road, southeast of the project site.

Fire prevention, suppression, and protection services are provided for the County of Maui by the Department of Fire Control. The department maintains a fire station in Hana which is located on the same property as the Police Station.

**b. Potential Impacts and Mitigation Measures**

The proposed project is not anticipated to adversely impact the existing level of police and fire protection services in the Hana area. The proposed project will not extend the service area for police and fire protection.

**2. Medical Facilities**

**a. Existing Conditions**

Maui Memorial Medical Center is the only major medical facility on the island. Acute, general, and emergency care services are provided by the approximately 213-bed facility. In Hana, the Hana Health Clinic is located 0.5 mile southwest of the project site, providing general health care, dental services, and 24-hour acute care services.

**b. Potential Impacts and Mitigation Measures**

The proposed project is not anticipated to adversely impact the existing level of medical services currently provided by the Hana Health Clinic or Maui Memorial Medical Center.

**3. Schools**

**a. Existing Conditions**

The State of Hawaii, Department of Education operates one (1) public school in the Hana region, Hana High and Elementary School. Hana High and Elementary School, located approximately one (1) mile to the northwest of the project site has a total enrollment of 341 students for the 2014-2015 school year (State Department of Education, June, 2015).

b. **Potential Impacts and Mitigation Measures**

The proposed project is not a population generator and is not anticipated to adversely impact the existing schools in the East Maui region.

4. **Solid Waste**

a. **Existing Conditions**

Solid waste in the vicinity of the project is collected by the County of Maui, Department of Public Works, Highways Division, and transported to the Hana Landfill.

Single-family solid waste collection service is provided by the County of Maui on a once-a-week basis. The Hana Landfill also accepts commercial waste generated by the region's limited commercial activity, including The Travaasa Hotel Hana and The Hana Ranch. The municipal solid waste area receives approximately three (3) to four (4) tons of waste per day. The landfill also has receiving areas for biodegradable materials and recycling. Two (2) or three (3) events are held per year to collect scrap metal at the recycling center.

b. **Potential Impacts and Mitigation Measures**

The proposed action involves the clean-up of the Makai Hana Landfill site and relocation of the removed waste to the active Hana Landfill area where it can be disposed in compliance with current State and Federal regulations. The active landfill has an estimated capacity of 290,400 cubic yards (c.y.) and is projected to be able to accommodate waste disposal to the year 2050 (R.M. Towill Corporation, July 2002). The estimated volume of the Makai Hana Landfill is approximately 89,200 c.y. of municipal solid waste minus approximately 4,500 c.y. (2,500 tons) of metals estimated to be recycled. The approximately 10,300 c.y. of soil excavated will be used for daily cover of the municipal solid waste to prevent wind-blown litter and mitigate odor. No adverse impacts to the County's solid waste disposal capacity are anticipated as a result of project implementation.

**5. Recreational Resources**

**a. Existing Conditions**

Major recreational resources in the Hana region include the County-maintained Hana Ball Park, Hana Bay Beach Park in Hana Town and Koki Beach Park near Hamoa. In addition, the State of Hawaii maintains the Waianapanapa State Park approximately 1.5 miles north of the subject property. The National Park Service maintains the Oheo Gulch Recreational area, part of the larger Haleakala National Park.

Portions of the Piilani Trail, also known as the King's Highway, traverse the shoreline area fronting the project site to the east. The Piilani Trail is not within the existing boundaries of the landfill site.

**b. Potential Impacts and Mitigation Measures**

The proposed project is not anticipated to adversely impact recreational resources available to the residents of East Maui. Further, the Piilani Trail, east of the project site, will not be impacted as a result of project implementation.

**D. INFRASTRUCTURE**

**1. Roadways**

**a. Existing Conditions**

Hana Highway is a two-way, two-lane State Highway, serving as the main transportation arterial with rural collector road status for the Hana region. The Hana Highway is noted for its scenic beauty and historic nature, which includes 59 bridges and 8 culverts, all of which are over 50 years old.

Access to the Hana Landfill is provided via Waikoloa Road, a paved roadway over compacted subgrade.

**b. Potential Impacts and Mitigation Measures**

Clean-up equipment transported to the landfill parcel will be utilized for grading and hauling activities associated with the clean-up and relocation of the municipal solid waste to the active landfill area. Once the



equipment is onsite, all activity associated with the removal will be confined to the landfill parcel. Scrap metal that can be recycled will be hauled by truck to a licensed recycle facility in Kahului. These trips will be relatively infrequent and are not anticipated to adversely impact traffic conditions along the highway. No adverse impacts to existing roadways in the vicinity of the project site are anticipated as a result of project implementation.

## **2. Water**

### **a. Existing Conditions**

The Hana region is serviced in part by the County of Maui, Department of Water Supply, which includes two deep wells, one located at Hamoa and one at Wakiu. These wells service a series of pipelines which in turn service the area of Hana Town. There is no County water servicing the subject property. A 2-inch waterline runs along the southern portion of Waikoloa Road, along the northern rim of Hana Bay. The 2-inch line terminates at a point approximately 750 feet south of the subject property (Munekiyo & Hiraga, Inc., October 2007).

Potable water is currently hauled to the Hana Landfill property by a water truck which is used for non-drinking purposes, such as dust control. Drinking water is provided by a vendor.

### **b. Potential Impacts and Mitigation Measures**

The proposed clean-up action does not involve modifications or improvements to the existing water infrastructure system in the Hana area. Project implementation is not anticipated to adversely impact the County of Maui's water service capacity in the vicinity of the project site. Ground water monitoring wells are located downstream of the active landfill area to assess potential adverse impacts of existing landfill activities on ground water quality. Detection monitoring continues on a quarterly schedule. Reports are submitted to DOH for review with any action required to maintain water quality carried out pursuant to DOH requirements.

3. **Wastewater**

a. **Existing Conditions**

There are no County wastewater collection or treatment facilities currently servicing the Hana region. Individual properties are generally serviced by individual wastewater systems (IWS), including septic tanks, cesspools and packaged treatment plants. An individual toilet is located onsite for use by landfill staff, serviced by an IWS. Water for the toilet use is trucked to the site and stored in a 250-gallon tank.

b. **Potential Impacts and Mitigation Measures**

The proposed project is not anticipated to adversely impact individual wastewater services in the East Maui region. No improvements or expansion to wastewater capacity is anticipated.

4. **Drainage System**

a. **Existing Conditions**

Storm water drainage in the vicinity of the project site generally follows natural contours, sheet flowing into streams and gullies and discharging into coastal waters. Within the limits of the Makai Hana Landfill, extensive grass and landscaping covers the area. The vegetative cover and porous cinder soils generally provide the necessary capacity to absorb runoff in times of heavy rains.

The removal of the municipal solid waste in the Makai Hana Landfill will involve the removal of vegetative cover and soil to expose refuse and excavation of the refuse until clean native soil is reached. The excavation will be done in small increments of approximately two (2) acres per year over a period of three (3) years. Temporary drainage control measures such as silt fences and berms to channel stormwater runoff from exposed surfaces to temporary retention basins will be carried out. After refuse has been removed, soil samples will be collected from the soil subgrade and tested to ensure that the remaining soil subgrade is in compliance with DOH EALs. When the subgrade soil tests are in compliance with EALs the area will be graded to achieve a relatively uniform slope to meet natural drainage channels. Erosion controls and revegetation of slopes

will be carried out to facilitate natural drainage of the area. Refer to **Figure 4.**

The active area of the landfill operates above the surrounding grade. As such, offsite runoff during storm conditions from the Makai Hana Landfill area to the active area is prevented by natural contours. Under current conditions, the active area of the landfill is graded with a soil cover in a series of terraces, sloped outward to control runoff resulting from direct rainfall. The terraces are sloped to direct runoff downslope into a stormwater detention basin.

**b. Potential Impacts and Mitigation Measures**

The proposed project is not anticipated to result in an increased level of onsite drainage. The project will include grading activities to remove the municipal solid waste and the graded areas will be contoured to match natural contours and then revegetated. The existing detention basin at the active landfill is lined with a geo-membrane to prevent contamination of the underlying soils and groundwater. No adverse impacts to downstream environments or to natural drainage patterns surrounding the project site are anticipated as a result of project implementation.

**5. Electrical and Telephone Systems**

**a. Existing Conditions**

Electrical and telephone services for the Hana region of Maui are provided by Maui Electric Company, Ltd. and Hawaiian Telcom, respectively. These services do not extend to the Hana Landfill. Electrical service for the office is provided by photovoltaic panels with a gasoline fueled generator for backup. Communication between landfill personnel is by radio and mobile phones are used to communicate outside of the landfill.

**b. Potential Impacts and Mitigation Measures**

The proposed project is not anticipated to adversely impact the existing level of electrical and telephone services in the East Maui region.

**6. Cumulative and Secondary Impacts**

A cumulative impact is defined as an impact to the environment which results from the incremental impact of an action when added to other past, present, and

reasonable foreseeable future actions regardless of what agency or person undertakes such other actions. Actions, particularly those that involve the construction of public facilities or infrastructure, may stimulate secondary impacts, such as increases in population and growth, or increases in the demand for public services. In this regard, it should be noted the proposed action involves clean-up of municipal solid waste in the Conservation District and relocation of the waste to a regulated landfill facility or metal recycling facility. The proposed project will result in compliance with the Clean Water Act and Federal, County and State regulations. Upon removal of the waste, the soils and subsoil of the Makai Hana Landfill area will be tested for DOH EALs. All soil or subgrade will be removed until the insitu soils or subgrade are within the limits of DOH EALs. There will be no expansion to the existing landfill capacity, therefore, cumulative and secondary impacts resulting from the proposed action are not anticipated.

### **III. RELATIONSHIP TO GOVERNMENTAL PLANS, POLICIES AND CONTROLS**

### **III. RELATIONSHIP TO GOVERNMENTAL PLANS, POLICIES AND CONTROLS**

#### **A. STATE LAND USE DISTRICT**

Chapter 205, Hawaii Revised Statutes (HRS), relating to the Land Use Commission, establishes the four (4) major land use districts in which all lands in the State are placed. These districts are designated “Urban”, “Rural”, “Agricultural” and “Conservation”. The active Hana Landfill facility (Parcel 12) is located within the “Agricultural” District while the Makai Hana Landfill is in the “Conservation” District. See **Figure 8**. Based on the Department of Land and Natural Resources (DLNR) Conservation subzone map, the portion of Parcel 12 located within the “Conservation” District falls within the Limited and General Subzones. See **Figure 9**. Pursuant to Chapter 5 Conservation District, Sections 13-5-23(a) and (b) 13-5-25(a), Hawaii Administrative Rules (HAR), respectively, the County of Maui, Department of Environmental Management’s (DEM) proposed clean-up and closure of the existing Makai Hana Landfill has been acknowledged by the DLNR, Office of Conservation and Coastal Lands (OCCL). A Conservation District Use Permit (CDUP) will be required for the clean-up activities.

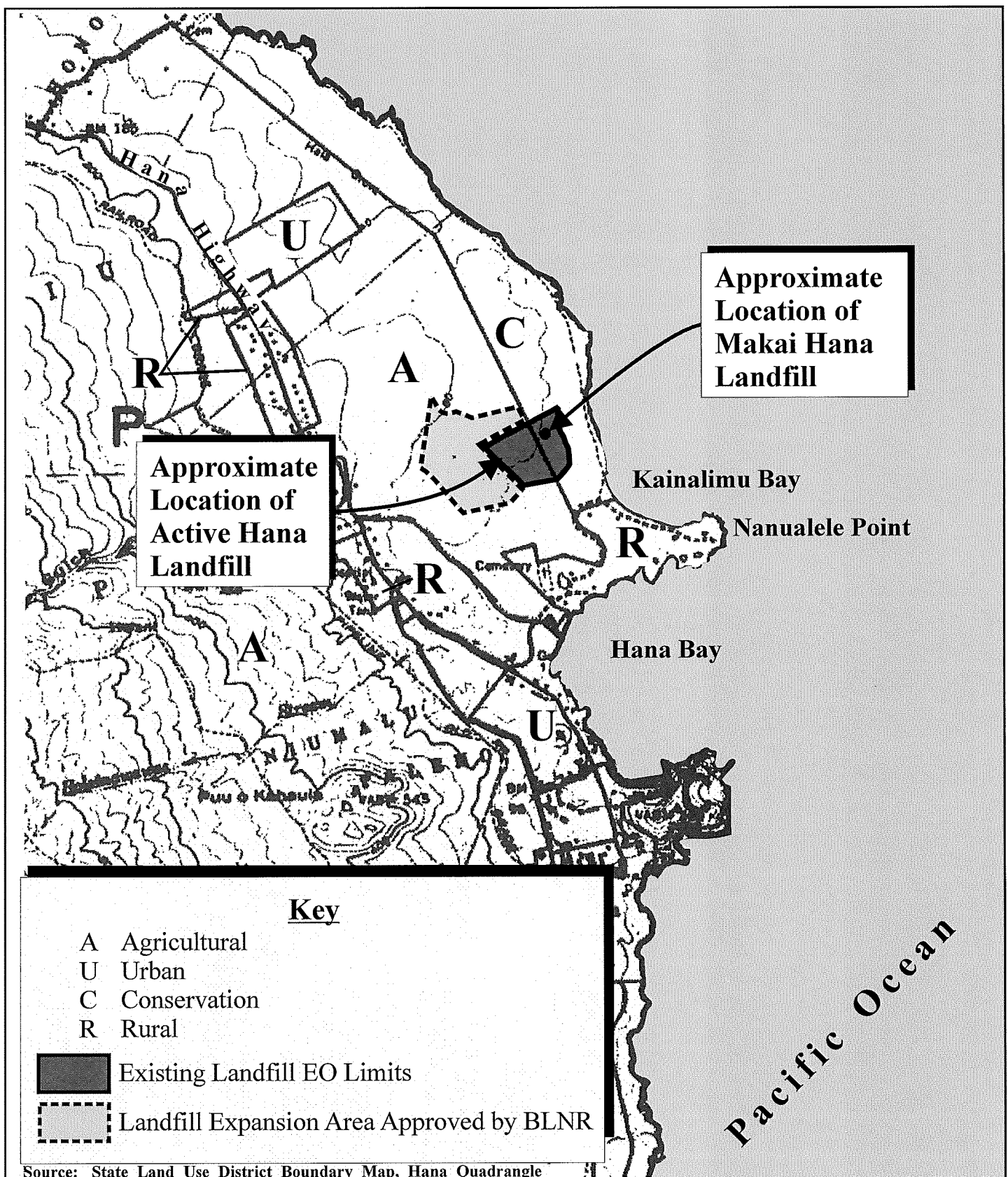
The Makai Hana Landfill meets the following criteria for a CDUP:

**(1) The proposed land use is consistent with the purpose of the Conservation District;**

The purpose of the Conservation District is to conserve, protect and preserve the important natural resources of the State through appropriate management and use to promote their long-term sustainability and the public health, safety, and welfare.

The Hana Makai Landfill was established in the Conservation District prior to the State Land Use law and discontinued around 2003. The removal of the waste outside of the Conservation District to the active landfill and closure will meet the purpose of the Conservation District and bring the landfill operations into compliance with Federal and State Department of Health (DOH) regulations.

The proposed closure of the Makai Hana Landfill is consistent with the objectives of the subzone of the land on which the closure will occur;

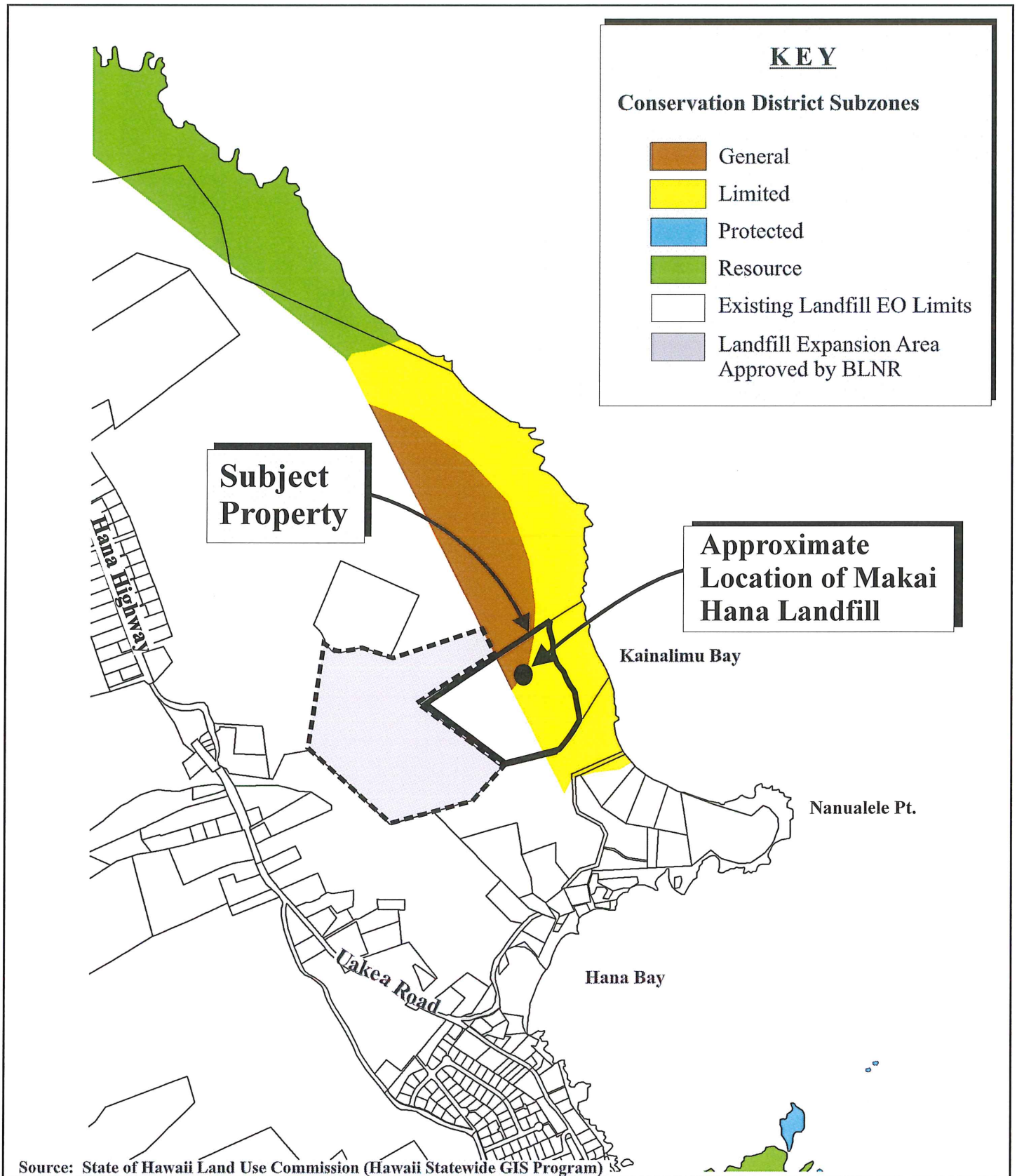


**Figure 8** Proposed Makai Hana Landfill  
Clean-Up and Closure  
State Land Use District Boundary Map

0 500 1000 2000 Feet







**Figure 9** Proposed Makai Hana Landfill  
Clean-Up and Closure  
Conservation District Subzone Map



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- (2) The proposed use is consistent with the objectives of the subzone of the land on which the land use will occur;**

The objective of the general subzone is to designate open space where specific conservation uses may not be defined, but where urban use would be premature.

In the limited subzone, a site approval from the DLNR is required for the demolition removal or minor alteration of existing structures, facilities, land, and equipment. The removal of the waste material from the Makai Hana Landfill with a site approval is permitted in the limited subzone.

In the limited subzone a CDUP is required for the proposed landscaping (including clearing, grubbing, grading, and tree removal), including chemical and mechanical control methods, in accordance with State and Federal laws and regulations, in an area of or more than 10,000 square feet. Any replanting shall be appropriate to the site location and shall give preference to plant materials that are endemic or indigenous to Hawaii. The introduction of invasive plant species is prohibited. The closure with a CDUP is permitted in the limited subzone.

Within the General Subzone all identified land uses and their associated permit or site plan approval requirements listed for the limited subzone also apply to the general subzone.

- (3) The proposed land use complies with provisions and guidelines contained in Chapter 205A, HRS, entitled “Coastal Zone Management”, where applicable;**

The Makai Hana Landfill is located in the Special Management Area (SMA) and an appropriate SMA Permit will be required prior to initiation of the removal and closure. Sections F and G of this Chapter address the provisions and guidelines of Chapter 205A, HRS and the SMA Rules of the Maui Planning Commission, respectively.

- (4) The proposed land use will not cause substantial adverse impact to existing natural resources within the surrounding area, community, or region;**

The removal of waste and closure of the Makai Hana Landfill is not anticipated to cause substantial adverse impact to existing natural resources within the surrounding area, community, or region. It will be a benefit to relocate the waste to the active landfill site to be compliant with Federal and State regulations.

- (5) **The proposed land use, including buildings, structures, and facilities, shall be compatible with the locality and surrounding areas, appropriate to the physical conditions and capabilities of the specific parcel or parcels;**

The project is limited to the removal of waste to the adjacent active landfill site and closure of the Makai Hana Landfill, and is compatible with the locality and surrounding areas.

- (6) **The existing physical and environmental aspects of the land, such as natural beauty and open space characteristics, will be preserved or improved upon, whichever is applicable;**

Once closure of the Makai Hana Landfill is completed, the area will be landscaped with grass. The site will blend into the natural beauty and open space characteristics of the Conservation District.

- (7) **Subdivision of land will not be utilized to increase the intensity of land uses in the Conservation District; and**

The removal and closure of the Makai Hana Landfill will not involve the subdivision of land or increase the intensity of uses in the Conservation District.

- (8) **The proposed land use will not be materially detrimental to the public health, safety, and welfare.**

The removal and closure of the Makai Hana Landfill will not be materially detrimental to the public health, safety, and welfare. It will be compliant with current Federal and State regulations.

In summary, the clean-up of the Makai Hana Landfill in the Limited and General Subzones will bring the existing landfill operations into compliance with Federal and DOH regulations and restore the area to its previous natural beauty and open space character.

The portion of the existing landfill located within the “Agricultural” District includes the active Hana Landfill area including the recycling area and green waste area.

#### **State Land Use Commission Special Use Permit**

In reference to the existing active Hana Landfill situated in the State Land Use Agricultural District, it is noted that landfills are not an outright permitted use in the State and County Agricultural Districts. As such, the existing active portion of the landfill

within the State Agricultural District received an approval by the State Land Use Commission for a Special Use Permit (SUP). This permit (SUP 1 2007/0002) is valid until 2018. The existing landfill operations also received a County Special Use Permit (CUP 2007/0001) which is also valid until 2018.

## **B. HAWAII STATE PLAN**

Chapter 226, HRS, also known as the Hawaii State Plan, is a long-range comprehensive plan which serves as a guide for the future long-term development of the State by identifying goals, objectives, policies, and priorities, as well as implementation mechanisms. Examples of State objectives and policies relevant to the Makai Hana Landfill are discussed below:

### **Section 226-14 Objectives and policies for facility systems – in general.**

Planning for the State's facility systems in general shall be directed towards achievement of the objective of water, transportation, waste disposal, and energy and telecommunications systems that support statewide social, economic, and physical objectives.

To achieve the general facility systems objectives, it shall be the policy of this State to:

Ensure that required facility systems can be supported within resource capacities and at reasonable cost to the user.

### **Section 226-15 Objectives and policies for facility systems – solid and liquid wastes.**

Planning for the State's facility systems with regard to solid and liquid wastes shall be directed towards the achievement of the following objective:

Maintenance of basic public health and sanitation standards relating to treatment and disposal of solid and liquid wastes.

## **C. MAUI COUNTY GENERAL PLAN**

As indicated by the Maui County Charter, the purpose of the general plan shall be to:

*... indicate desired population and physical development patterns for each island and region within the County; shall address the unique problems and needs of each island and region; shall explain opportunities and the social, economic, and environmental consequences related to potential developments; and shall set forth the desired sequence, patterns and characteristics of future developments. The general plan shall identify*

*objectives to be achieved, and priorities, policies, and implementing actions to be pursued with respect to population density; land use maps, land use regulations, transportation systems, public and community facility locations, water and sewage systems, visitor destinations, urban design, and other matters related to development.*

Chapter 2.80B of the Maui County Code, relating to the General Plan and Community Plans, implements the foregoing Charter provision through enabling legislation which calls for a Countywide Policy Plan and a Maui Island Plan. The Countywide Policy Plan was adopted as Ordinance No. 3732 on March 24, 2010, while the Maui Island Plan, which delineates areas for future urban and rural growth as part of a Directed Growth Strategy, was adopted as Ordinance No. 4004 on December 28, 2012.

The following sections identify pertinent objectives, policies, implementing actions and related provisions set forth in the Countywide Policy Plan and the Maui Island Plan. It is recognized that both documents are comprehensive in nature and address a number of functional planning areas which apply to all programs, plans, and projects. However, for purposes of addressing General Plan compliance requirements, policy considerations which are deemed most relevant in terms of compatibility and consistency are addressed in this report section.

## **1. Countywide Policy Plan**

With regard to the Countywide Policy Plan, Section 2.80B.030 of the Maui County Code states the following.

*The Countywide policy plan shall provide broad policies and objectives which portray the desired direction of the County's future. The Countywide policy plan shall include:*

- 1. A vision for the County;*
- 2. A statement of core themes or principles for the County;  
and*
- 3. A list of Countywide objectives and policies for population,  
land use, the environment, the economy, and housing.*

Core principles set forth in the Countywide Policy Plan are listed as follows:

- 1. Excellence in the stewardship of the natural environment  
and cultural resources;*
- 2. Compassion for and understanding of others;*

3. *Respect for diversity;*
4. *Engagement and empowerment of Maui County residents;*
5. *Honor for all cultural traditions and histories;*
6. *Consideration of the contributions of past generations as well as the needs of future generations;*
7. *Commitment to self-sufficiency;*
8. *Wisdom and balance in decision making;*
9. *Thoughtful, island appropriate innovation; and*
10. *Nurturance of the health and well-being of our families and our communities.*

Congruent with these core principles, the Countywide Policy Plan identifies goals objectives, policies and implementing actions for pertinent functional planning categories, which are identified as follows:

1. *Natural environment*
2. *Local cultures and traditions*
3. *Education*
4. *Social and healthcare services*
5. *Housing opportunities for residents*
6. *Local economy*
7. *Parks and public facilities*
8. *Transportation options*
9. *Physical infrastructure*
10. *Sustainable land use and growth management*
11. *Good governance*

With respect to the proposed Makai Hana Landfill clean-up and closure, the following goals, objectives, policies, and implementing actions are illustrative of the compliance with the Countywide Policy Plan.

## **IMPROVE PHYSICAL INFRASTRUCTURE**

### **Goal:**

*Maui County's physical infrastructure will be maintained in optimum condition and will provide for and effectively serve the needs of the County through clean and sustainable technologies.*

### **Objective:**

*Improve waste-disposal practices and systems to be efficient, safe, and as environmentally sound as possible.*

### **Policies:**

- *Provide sustainable waste-disposal systems and comprehensive, convenient recycling programs to reduce the flow of waste into landfills.*
- *Support innovative and alternative practices in recycling solid waste and wastewater and disposing of hazardous waste.*

### **Objective:**

*Improve the planning and management of infrastructure systems.*

### **Policies:**

- *Provide reliable and sufficient level of funding to enhance and maintain infrastructure system.*
- *Maintain inventories of infrastructure capacity, and project future infrastructure needs.*

## **2. Maui Island Plan**

The Maui Island Plan (MIP) is applicable to the island of Maui only, providing more specific policy-based strategies for population, land use, transportation, public and community facilities, water and sewage systems, visitor destinations, urban design, and other matters related to future growth.

As provided by Chapter 2.80B, the MIP shall include the following components:

1. *An island-wide land use strategy, including a managed and directed growth plan*



2. *A water element assessing supply, demand and quality parameters*
3. *A nearshore ecosystem element assessing nearshore waters and requirements for preservation and restoration*
4. *An implementation program which addresses the County's 20-year capital improvement requirements, financial program for implementation, and action implementation schedule*
5. *Milestone indicators designed to measure implementation progress of the MIP*

It is noted that the Ordinance No. 4004 does not address the component relating to the implementation program. Chapter 2.80B of the Maui County Code, relating to the General Plan, was amended by Ordinance No. 3979, effective October 5, 2012, to provide that the implementation program component be adopted no later than one (1) year following the effective date of Ordinance No. 4004. In December 2013 and March 2014, the Council approved time extensions for adopting the implementation program component of the MIP. The implementation program component was adopted by Ordinance No. 4126 on May 19, 2014.

The MIP addresses a number of planning categories with detailed policy analysis and recommendations which are framed in terms of goals, objectives, policies and implementing actions. These planning categories address the following areas:

1. *Population*
2. *Heritage Resources*
3. *Natural Hazards*
4. *Economic Development*
5. *Housing*
6. *Infrastructure and Public Facilities*
7. *Land Use*

Additionally, an essential element of the MIP is its directed growth plan which provides a management framework for future growth in a manner that is fiscally, environmentally, and culturally prudent. Among the directed growth

management tools developed through the MIP process are maps delineating urban growth boundaries (UGB), small town boundaries (STB), and rural growth boundaries (RGB). The respective boundaries identify areas appropriate for future growth and their corresponding intent with respect to development character.

The Hana Landfill is located within the Hana Small Town Boundary. In this regard, it is consistent with the directed growth strategy defined via growth maps adopted in the MIP.

In addition, the proposed Makai Hana Landfill clean-up and closure project has been reviewed with respect to pertinent goals, objectives, policies, and implementing actions of the MIP. A summary of these policy statements are provided below:

#### **INFRASTRUCTURE AND PUBLIC FACILITIES – SOLID WASTE**

##### **Goal:**

- 6.1                      *Maui will have implemented the ISWMP thereby diverting waste from its landfills, extending their capacities.*

##### **Objective:**

- 6.1.1                      *Meet our future solid waste needs with a more comprehensive planning and management strategy.*

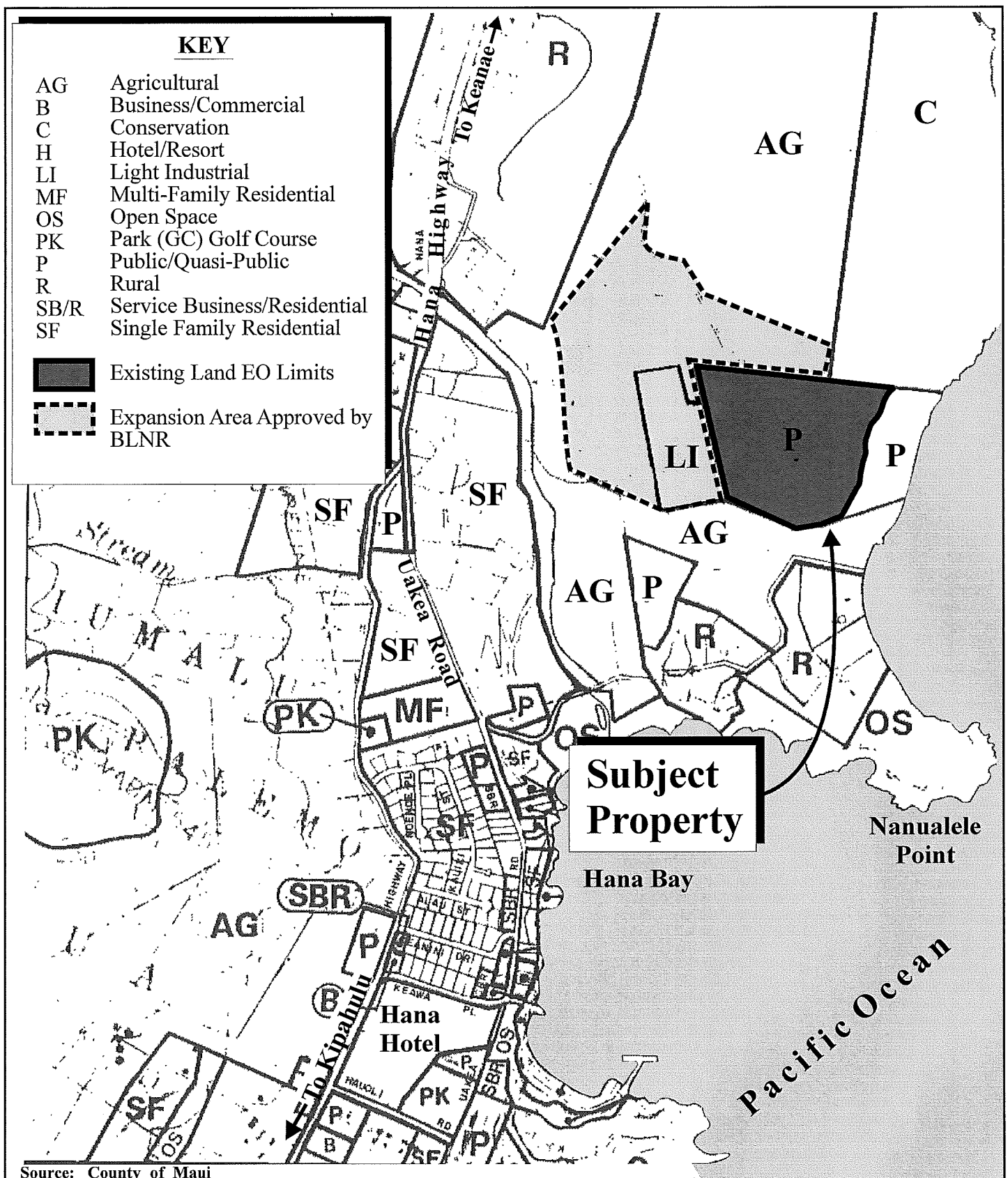
##### **Policy:**

- 6.1.1.d                      *Minimize future active, unlined landfill cells to the extent feasible.*

In summary, the proposed Makai Hana Landfill clean-up and closure project is consistent with the above-noted themes and principles of the Countywide Policy Plan and the MIP.

#### **D.    HANA COMMUNITY PLAN**

The existing Hana landfill site is designated by the Hana Community Plan for Public/Quasi-Public land use. A portion of the active landfill on Parcel 7 is designated “Light Industrial”, while the remaining portion of Parcel 7 of the expansion area approved by the Board of Land and Natural Resources is designated “Agricultural”. See **Figure 10**. The proposed removal of municipal solid waste (MSW) and relocating the



**Figure 10** Proposed Makai Hana Landfill  
Clean-Up and Closure  
Community Plan Land Use Map



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refuse to the existing active landfill area is consistent with the underlying community plan designations. In addition, the proposed project is consistent with the following Goal and Policy (Physical Infrastructure) of the Hana Community Plan:

**Goal**

*Timely and environmentally sensitive development and maintenance of infrastructure systems which protect and preserve the safety and health of the Hana region's residents and visitors, including the provision of domestic water, utility and waste disposal services, and effective transportation systems which meet the needs of residents and visitors while protecting the region's natural character.*

**Policy (Solid Waste)**

*Develop and implement a comprehensive waste management plan which includes reduction, recycling and reuse of solid waste and wastewater as major plan components.*

The proposed improvements are consistent with the goal of protecting the region's natural character and the policy to implement a comprehensive waste management plan for the East Maui region.

**E. ZONING**

Permitted uses and development standards are set forth by Title 19 of the Maui County Code relating to zoning. Infrastructural systems, including roadway and supporting structures (e.g., drainage basins), are permitted in each of the County zoning districts.

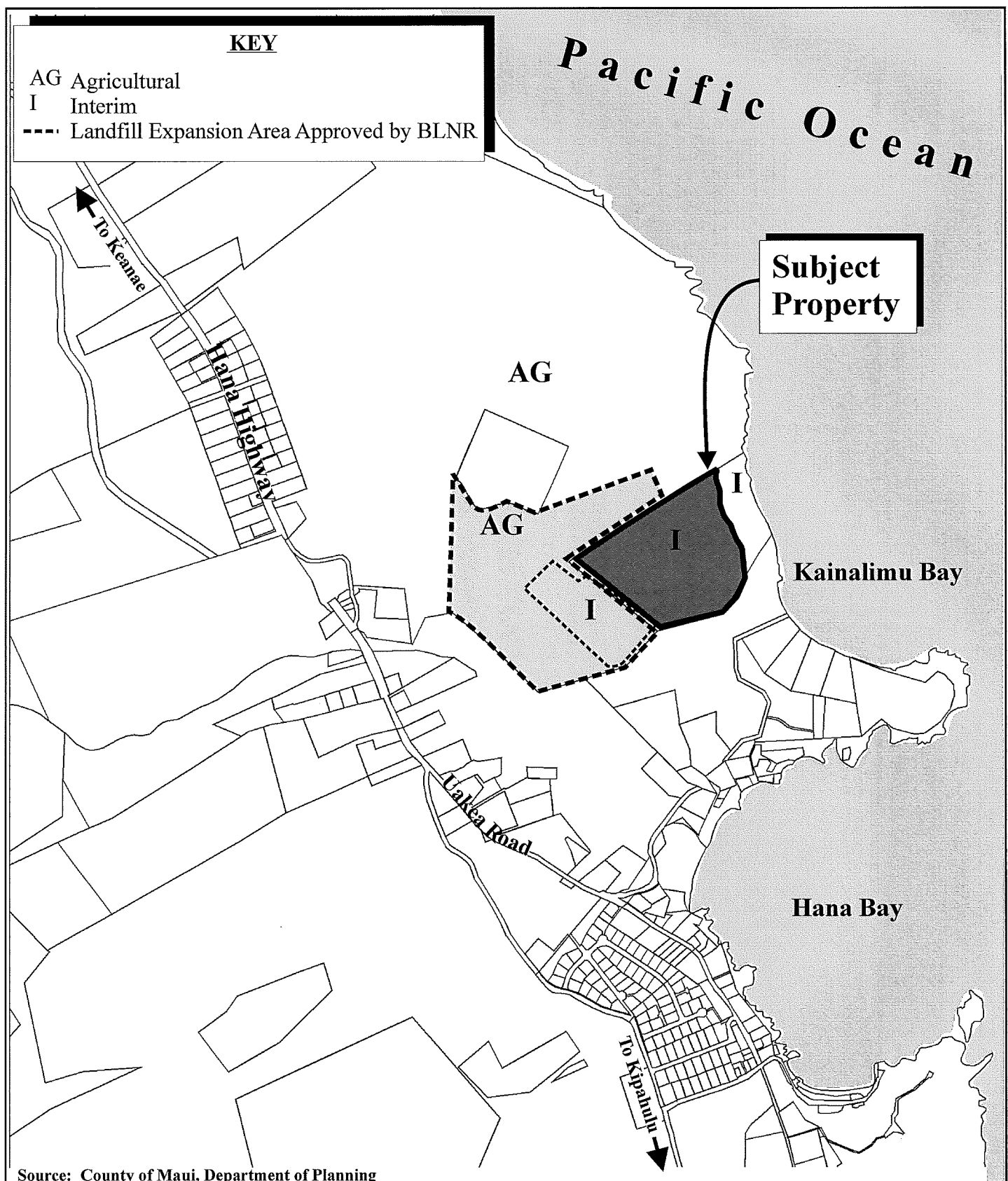
Parcel 12, the existing landfill site, is County zoned Interim. See **Figure 11**.

Pursuant to Maui County Code (MCC), Section 19.02A.030, Interim Zoning Provisions, public/quasi-public facilities are permitted in the Interim District.

Parcel 7 is located within the Agricultural District and Interim District. As previously mentioned, a State Land Use Special Use Permit and a County Special Use Permit have been approved for the landfill operations in the Agricultural District. These two (2) permits are valid until 2018.

**F. SPECIAL MANAGEMENT AREA OBJECTIVES AND POLICIES**

The project site is located within the County of Maui's Special Management Area (SMA). Pursuant to Chapter 205A, Hawaii Revised Statutes, and the SMA Rules and Regulations for the Maui Planning Commission, actions proposed within the SMA are



**Figure 11**      **Proposed Makai Hana Landfill**  
**Clean-Up and Closure**  
**Parcel Zoning Map**

NOT TO SCALE



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evaluated with respect to SMA objectives, policies and guidelines. (It is noted that Chapter 205A, HRS was adopted in 1977 by the State of Hawaii, after the Hana Landfill was opened.) The expansion of the active landfill received an SMA Use Permit approval in 2007 (SM1 2007/0001). This section addresses the proposed action in relation to applicable coastal zone management considerations, as set forth in Chapter 205A and the Rules and Regulations of the Maui Planning Commission.

## 1. **Recreational Resources**

**Objective:** Provide coastal recreational opportunities accessible to the public.

**Policies:**

- (A) *Improve coordination and funding of coastal recreational planning and management; and*
- (B) *Provide adequate, accessible, and diverse recreational opportunities in the coastal zone management area by:*
  - (i) *Protecting coastal resources uniquely suited for recreational activities that cannot be provided in other areas;*
  - (ii) *Requiring replacement of coastal resources having significant recreational value including, but not limited to, surfing sites, fishponds, and sand beaches, when such resources will be unavoidably damaged by development; or requiring reasonable monetary compensation to the State for recreation when replacement is not feasible or desirable;*
  - (iii) *Providing and managing adequate public access, consistent with conservation of natural resources, to and along shorelines with recreational value;*
  - (iv) *Providing an adequate supply of shoreline parks and other recreational facilities suitable for public recreation;*
  - (v) *Ensuring public recreational uses of County, State, and federally owned or controlled shoreline lands and waters having recreational value consistent with public safety standards and conservation of natural resources;*
  - (vi) *Adopting water quality standards and regulating point and non-point sources of pollution to protect, and where feasible, restore the recreational value of coastal waters;*

- (vii) *Developing new shoreline recreational opportunities, where appropriate, such as artificial lagoons, artificial beaches, and artificial reefs for surfing and fishing; and*
- (viii) *Encouraging reasonable dedication of shoreline areas with recreational value for public use as part of discretionary approvals or permits by the land use commission, board of land and natural resources, and County authorities; and crediting such dedication against the requirements of Section 46-6, HRS.*

**Response:** The proposed clean-up and closure of the Makai Hana Landfill and relocation of the municipal solid waste to the active landfill will not result in any adverse physical alterations to the environment. The Makai Hana Landfill post-clean-up topography will be designed to promote natural drainage conditions. Soil testing, to ensure subgraded conditions are below DOH EALs, will ensure no adverse impacts to coastal recreational resources. Further, access to and along the shoreline environment, including the ancient Piilani Trail, are located outside the project boundaries and will not be impeded by the proposed grading activities. The Piilani Trail is located within a 250 foot conservation area between the eastern landfill boundary and the coastline.

## 2. **Historic Resources**

**Objective:** *Protect, preserve and, where desirable, restore those natural and manmade historic and prehistoric resources in the coastal zone management area that are significant in Hawaiian and American history and culture.*

### **Policies:**

- (A) *Identify and analyze significant archeological resources;*
- (B) *Maximize information retention through preservation of remains and artifacts or salvage operations; and*
- (C) *Support State goals for protection, restoration, interpretation, and display of historic resources.*

**Response:** An archaeological assessment was conducted in 2003 on the subject property, indicating that the underlying lands have been significantly altered during prior grading and landfill activities. There were no significant material culture remains identified by the inspection. The archaeological assessment carried out with subsurface testing around the boundaries of the Makai Hana

Landfill area in 2015 indicated the proposed clean-up action is not anticipated to have an adverse effect on historic properties. Refer to **Appendix “C-1”**. In the event that any subsurface archaeological resources are encountered during grading activities, all work will be halted in the vicinity of the find and the State Historic Preservation Division (SHPD) will be contacted immediately to determine an appropriate mitigation strategy.

### 3. **Scenic and Open Space Resources**

**Objective:** *Protect, preserve and, where desirable, restore or improve the quality of coastal scenic and open space resources.*

**Policies:**

- (A) *Identify valued scenic resources in the coastal zone management area;*
- (B) *Ensure that new developments are compatible with their visual environment by designing and locating such developments to minimize the alteration of natural landforms and existing public views to and along the shoreline;*
- (C) *Preserve, maintain, and, where desirable, improve and restore shoreline open space and scenic resources; and*
- (D) *Encourage those developments that are not coastal dependent to locate in inland areas.*

**Response:** The project site is not located within a significant coastal view corridor. The proposed project is not anticipated to result in adverse impacts to shoreline views or open space resources. The active landfill operations are located over 350 feet from the shoreline.

### 4. **Coastal Ecosystems**

**Objective:** *Protect valuable coastal ecosystems, including reefs, from disruption and minimize adverse impacts on all coastal ecosystems.*

**Policies:**

- (A) *Exercise an overall conservation ethic, and practice stewardship in the protection, use, and development of marine and coastal resources;*



- (B) *Improve the technical basis for natural resource management;*
- (C) *Preserve valuable coastal ecosystems, including reefs, of significant biological or economic importance;*
- (D) *Minimize disruption or degradation of coastal water ecosystems by effective regulation of stream diversions, channelization, and similar land and water uses, recognizing competing water needs; and*
- (E) *Promote water quantity and quality planning and management practices that reflect the tolerance of fresh water and marine ecosystems and maintain and enhance water quality through the development and implementation of point and nonpoint source water pollution control measures.*

**Response:** Best Management Practices (BMPs) will be utilized to ensure that grading activities in association with the Makai Hana Landfill clean-up and closure do not adversely impact coastal ecosystems. Runoff from the active landfill operations will continue to be channeled and directed to the onsite detention basin. Further, the DEM will continue to maintain its quarterly groundwater monitoring program as well as use of BMPs during daily landfill operations to prevent adverse impacts to the surrounding environment.

## 5. **Economic Uses**

**Objective:** *Provide public or private facilities and improvements important to the State's economy in suitable locations.*

### **Policies:**

- (A) *Concentrate coastal dependent development in appropriate areas;*
- (B) *Ensure that coastal dependent development such as harbors and ports, and coastal related development such as visitor facilities and energy generating facilities, are located, designed, and constructed to minimize adverse social, visual, and environmental impacts in the coastal zone management area; and*
- (C) *Direct the location and expansion of coastal dependent developments to areas presently designated and used for such developments and permit reasonable long-term growth at such areas, and permit coastal dependent development outside of presently designated areas when:*
  - (i) *Use of presently designated locations is not feasible;*

- (ii) *Adverse environmental effects are minimized; and*
- (iii) *The development is important to the State's economy.*

**Response:** The Hana Landfill operation has been ongoing at the subject property since 1969. Removal of the MSW from the Makai Hana Landfill to the current active landfill will maintain a public facility important to the County and State in a suitable location. The proposed project is anticipated to result in beneficial impacts to the economy of East Maui and Maui County through local contract expenditures for goods and services.

## 6. **Coastal Hazards**

**Objective:** *Reduce hazard to life and property from tsunami, storm waves, stream flooding, erosion, subsidence and pollution.*

### **Policies:**

- (A) *Develop and communicate adequate information about storm wave, tsunami, flood, erosion, subsidence, and point and nonpoint source pollution hazards;*
- (B) *Control development in areas subject to storm wave, tsunami, flood, erosion, hurricane, wind, subsidence, and point and nonpoint pollution hazards;*
- (C) *Ensure that developments comply with requirements of the Federal Flood Insurance Program; and*
- (D) *Prevent coastal flooding from inland projects.*

**Response:** According to the Flood Insurance Rate Map for the area, the main portion of the clean-up operations and active landfill are located within Flood Zone X, an area outside of the 100-year flooding with no development restrictions. Two (2) small areas of the Makai Hana Landfill along the eastern boundary are located in Zone AE which is subject to inundation by the one (1) percent annual chance flood with a flood elevation of approximately 17 feet amsl. After removal of the MSW, the area will be vegetated to reduce impacts from stormwater runoff. Grading and landfill operations are in upland areas, located at elevations in excess of 20 feet amsl and above the base flood elevation. Implementation of the project is not anticipated to increase the region's susceptibility to coastal hazards.

## 7. **Managing Development**

**Objective:** *Improve the development review process, communication, and public participation in the management of coastal resources and hazards.*

**Policies:**

- (A) *Use, implement, and enforce existing law effectively to the maximum extent possible in managing present and future coastal zone development;*
- (B) *Facilitate timely processing of applications for development permits and resolve overlapping of conflicting permit requirements; and*
- (C) *Communicate the potential short and long-term impacts of proposed significant coastal developments early in their life cycle and in terms understandable to the public to facilitate public participation in the planning and review process.*

**Response:** In compliance with the requirements of Chapter 343, HRS, this EA has been prepared to facilitate public understanding and involvement with the proposed project. The EA will also be the technical document for the SMA Permit and CDUP applications.

## 8. **Public Participation**

**Objective:** *Stimulate public awareness, education, and participation in coastal management.*

**Policies:**

- (A) *Promote public involvement in coastal zone management processes;*
- (B) *Disseminate information on coastal management issues by means of educational materials, published reports, staff contact, and public workshops for persons and organizations concerned with coastal issues, developments, and government activities; and*
- (C) *Organize workshops, policy dialogues, and site-specific mediations to respond to coastal issues and conflicts.*

**Response:** As previously noted, public awareness of the project is being promoted through the EA process, SMA Permit and CDUP. The proposed project is not contrary to the objectives of public awareness, education, and participation.

9. **Beach Protection**

**Objective:** *Protect beaches for public use and recreation.*

**Policies:**

- (A) *Locate new structures inland from the shoreline setback to conserve open space, minimize interference with natural shoreline processes, and minimize loss of improvements due to erosion;*
- (B) *Prohibit construction of private erosion-protection structures seaward of the shoreline, except when they result in improved aesthetic and engineering solutions to erosion at the sites and do not interfere with existing recreational and waterline activities; and*
- (C) *Minimize the construction of public erosion-protection structures seaward of the shoreline.*

**Response:** During grading activities associated with the clean-up of the Makai Hana Landfill, appropriate BMP's will be utilized to ensure the downstream coastal environment is not adversely impacted. A 250 foot conservation area exists between the current landfill eastern boundary and the shoreline. The conservation designated area protects beaches for public use and recreation.

10. **Marine Resources**

**Objective:** *Promote the protection, use, and development of marine and coastal resources to assure their sustainability.*

**Policies:**

- (A) *Ensure that the use and development of marine and coastal resources are ecologically and environmentally sound and economically beneficial;*
- (B) *Coordinate the management of marine and coastal resources and activities to improve effectiveness and efficiency;*

- (C) *Assert and articulate the interests of the State as a partner with Federal agencies in the sound management of ocean resources within the United States exclusive economic zone;*
- (D) *Promote research, study, and understanding of ocean processes, marine life, and other ocean resources in order to acquire and inventory information necessary to understand how ocean development activities relate to and impact upon ocean and coastal resources; and*
- (E) *Encourage research and development of new, innovative technologies for exploring, using, or protecting marine and coastal resources.*

**Response:** The proposed (post clean-up) grading improvements are designed to collect and channel onsite runoff to natural drainage channels. The proposed municipal solid waste clean-up operations are not anticipated to increase storm-water runoff. The relocation of the municipal solid waste from the Makai Hana Landfill to the active landfill area is not anticipated to adversely impact coastal marine resources.

In addition to the foregoing objectives and policies, SMA permit review criteria pursuant to §205A 30.5(a) Prohibitions provides that:

*No special management area use permit or special management area minor permit shall be granted for structures that allow artificial light from floodlights, uplights, or spotlights used for decorative or aesthetic purposes when the light:*

- (1) *Directly illuminates the shoreline and ocean waters; or*
- (2) *Is directed to travel across property boundaries toward the shoreline and ocean waters.*

Further, artificial lighting provided by a government agency or its authorized users for government operations, security, public safety, or navigational needs shall make reasonable efforts to properly position or shield lights to minimize adverse impacts.

**Response:** All grading, clean-up, and landfill operations are carried out during daylight hours. There are no artificial outdoor lights that directly illuminate the shoreline or ocean waters.

## **G. MAUI PLANNING COMMISSION SPECIAL MANAGEMENT AREA RULES AND REGULATIONS**

The Rules and Regulations of the Maui Planning Commission, Chapter 202 were established in order to implement HRS, Chapter 205A relating to Coastal Zone Management and Special Management Areas. In addition to establishing procedures for processing of SMA applications and procurement of related permits, the rules assist the Commission in giving consideration to State policy regarding coastal zones.

This section addresses the project's relationship to applicable coastal zone management considerations as set forth in the Maui Planning Commission Rules and Regulations, Chapter 202, "Special Management Area Permit Procedures," which are provided for considering the significance of potential environmental and ecological effects of a proposed action. The criteria have been reviewed and analyzed with respect to the proposed project.

### **1. Involves an irrevocable commitment to loss or destruction of any natural or cultural resources.**

Based on the archaeological investigations, including subsurface testing and cultural impact assessment findings, there are no adverse impacts to natural or cultural resources anticipated as a result of the proposed project. The clean-up and closure of the Makai Hana Landfill will be carried out pursuant to a Conservation District Use Permit and in compliance with the Conservation District goals and objectives. In accordance with Section 6E-43.6, HRS and Chapter 13-300, Hawaii Administrative Rules (HAR), if any significant cultural deposits or human skeletal remains are encountered, work will stop in the immediate vicinity and SHPD will be contacted to establish the appropriate protocols and level of mitigation. In addition, there are no streams or wetlands which will be impacted, and there are no rare, threatened, or endangered species of plants or wildlife anticipated to be adversely affected by the proposed project.

### **2. Significantly curtails the range of beneficial uses of the environment.**

The proposed project will not curtail the range of beneficial uses of the environment. Applicable dust control, noise control, and drainage control measures will be implemented during the clean-up operations to minimize any construction-related impacts.

3. **Conflicts with the County's or the State's long-term environmental policies or goals.**

As the proposed project brings the Makai Hana Landfill into compliance with regulations, the activity does not conflict with the State's Environmental Policy and Guidelines as set forth in Chapter 344, HRS. The proposed action is consistent with the underlying land use designations of the Hana Landfill parcel.

4. **Substantially affects the economic or social welfare and activities of the community, County, or State.**

On a short-term basis, the project will support construction and construction-related employment and have a beneficial impact on the local economy during the period of construction. On a long-term basis, the project benefits the community welfare by ensuring a MSW facility that complies with State and Federal regulations.

5. **Involves substantial secondary impacts, such as population changes and increased effects on public facilities, streets, drainage, sewage, and water systems, and pedestrian walkways.**

As the proposed action involves the clean-up and closure of a landfill, the project will not result in adverse secondary impacts to population, public services and facilities and public infrastructure systems.

6. **In itself has no significant adverse effects but cumulatively has considerable effect upon the environment or involves a commitment for larger actions.**

The proposed activity brings the Makai Hana Landfill into compliance with environmental Federal and State regulations. As such, the proposed project is not anticipated to have a cumulative adverse impact on the environment, nor involve a commitment to larger actions.

7. **Substantially affects a rare, threatened, or endangered species of animal or plant, or its habitat.**

There are no rare, threatened, or endangered species of fauna, flora, or their habitats in or adjacent to the project site. Adverse impacts to these features are not anticipated.

8. **Is contrary to the State plan, County's general plan, appropriate community plans, zoning and subdivision ordinances.**

The proposed action is in accordance with applicable State, County, and the Hana Community Plan land use policies and plans.

As previously noted, SMA Permit and CDUP applications will be processed for the proposed project.

9. **Detrimentially affects air or water quality or ambient noise levels.**

Short-term air quality and noise impacts from the proposed action will be mitigated through the implementation of Best Management Practices (BMPs). There are no long-term effects on air, water quality, or noise as a result of the proposed project.

10. **Affects an environmentally sensitive area, such as flood plains, shoreline, tsunami zone, erosion-prone area, geologically hazardous land, estuary, fresh waters, or coastal waters.**

The project site is located within Flood Zone X (unshaded) and two (2) small areas along the eastern boundary is located in Zone AE. Zone X designation denotes an area of low flood risk and minimal flooding with no development restrictions and Zone AE denotes a flood hazard area subject to inundation by the one (1) percent annual chance flood. Graded areas will be revegetated to mitigate stormwater runoff from the site. The subject property is not located within the tsunami evacuation zone. As such, the proposed project is not anticipated to present significant adverse impacts on any environmentally sensitive areas.

11. **Substantially alters natural land forms and existing public views to and along the shoreline.**

The proposed project will not adversely alter natural land forms and is not within a public view corridor. The grading of the Makai Hana Landfill area will restore the topography of the area to its approximate pre-waste disposal topographic conditions.

12. **Is contrary to the objectives and policies of chapter 205A, HRS.**

A review of the objectives and policies of Chapter 205A, HRS, is provided in its entirety in the previous part of this section. Therein, it addresses the project's relationship to the Coastal Zone Management considerations. Based on the



foregoing analysis, the project will appropriately and adequately mitigate impacts to SMA-relevant areas of interest. Accordingly, there are no significant adverse environmental impacts anticipated with the proposed project.

**IV. SUMMARY OF ADVERSE  
ENVIRONMENTAL EFFECTS  
WHICH CANNOT BE  
AVOIDED**

## **IV. SUMMARY OF ADVERSE ENVIRONMENTAL EFFECTS WHICH CANNOT BE AVOIDED**

Grading activities associated with the proposed clean-up and closure of the Makai Hana Landfill will result in certain unavoidable operational and construction-related impacts, including noise-generated impacts and air quality impacts associated with the operation of equipment. Air quality will also be impacted by dust generated from grading work. However, all operational and construction-related impacts will be temporary and mitigated through implementation of appropriate Best Management Practices. The impacts of the proposed action are not anticipated to be significant.

## **V. ALTERNATIVES TO THE PROPOSED ACTION**

## **V. ALTERNATIVES TO THE PROPOSED ACTION**

The proposed action is necessary to comply with Title 40 of the Code of Federal Regulations (CFR) and the Department of Health, Hawaii Administrative Rules (HAR), Title 11-58.1-17, which sets forth minimum National and State criteria under the Resource Conservation and Recovery Act, for all municipal solid waste landfill (MSWLF) units and under the Clean Water Act. All MSWLF units that receive waste on or after October 9, 1993 are required to meet the provision of Title 40 and HAR Title 11-58.1-17 which in the case of the Hana Landfill included clean-up of the municipal solid waste (MSW) deposited at the Makai Hana Landfill subsequent to 1993.

### **A. PREFERRED ALTERNATIVE – CLEAN CLOSURE**

The preferred alternative is the clean closure, which involves the clean-up and removal of all MSW from the Makai Hana Landfill and relocation of the refuse to the current active landfill area. As removal is completed, vegetation will be restored at the former landfill site.

### **B. CLOSE IN PLACE ALTERNATIVE**

The alternatives considered to meet the requirements of CFR, Title 40 and HAR, Title 11-58.1-17 were limited to the removal or retention in place of the MSW deposited in the Makai Hana Landfill from October 9, 1993 (the effective date of CFR, Title 40) to 2003, when landfill operations ceased on the east side of Waikoloa Road. The close in place alternative would require importing low-to-medium permeability soil to place a minimum 18-inch cap of soil over the 6.4-acre Makai Hana Landfill area, providing engineered drainage facilities, and complying with post-closure maintenance and monitoring requirements for a minimum 30-year period. The County considered this alternative, including its incompatibility with Conservation District goals and objectives, and determined it was not preferable to the Clean Closure alternative.

### **C. NO ACTION ALTERNATIVE**

The no action alternative would mean the Hana Landfill would not be in compliance with Federal and State regulations which would present implications on its ability to be operated as a MSWLF in the future. As such, the no action alternative is not considered viable in this instance.

**D. DEFERRED ACTION ALTERNATIVE**

The “deferred action” alternative would have similar consequences as a “no action” alternative as the Hana Landfill would not be in compliance with Federal and State regulations for a period of time until a closure project was pursued. As such, this could present implications to the County of Maui, Department of Environmental Management (DEM) ability to continue to provide adequate waste disposal services to residents in the East Maui region and its ability to maintain a Department of Health permit for the Hana Landfill.

## **VI. IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES**

## **VI. IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES**

The proposed action will involve the commitment of additional lands, fuel, labor, funding and material resources. Given the need for operational compliance with Federal, State, and County land use and landfill regulations, the commitment of resources is justified based on the eventual benefits to be realized through project implementation and continuation of convenient and reliable solid waste services to the Hana region.



## **VII. FINDINGS AND CONCLUSIONS**

## VII. FINDINGS AND CONCLUSIONS

The proposed project has been evaluated in accordance with the Significance Criteria of Department of Health (DOH), Section 11-200-12 of the Hawaii Administrative Rules, Environmental Impact Statement Rules. Based on the following analysis, the proposed project is not anticipated to result in any significant adverse impacts. A discussion of project conformance to the criteria is presented below:

1. **Involves an irrevocable commitment to loss or destruction of any natural or cultural resource.**

According to an archaeological assessment in 2003 and archaeological assessment survey with subsurface testing completed in 2015 for the Department of Environmental Management (DEM), implementation of the project is not anticipated to result in adverse impacts to archaeological resources. No rare, endangered or threatened species of flora, fauna, or avifauna have been identified within the vicinity of the project site. Further, the proposed project is not anticipated to result in significant adverse impact to natural or cultural resources.

2. **Curtails the range of beneficial uses of the environment.**

The proposed project involves the clean-up of municipal solid waste in an area designated Conservation District and within the Special Management Area (SMA) which will be disposed of in an active landfill area which is permitted. The existing landfill operations are activities which have been in operation at the property since 1969. The proposed clean-up operation is not anticipated to curtail the range of beneficial uses of the environment.

3. **Conflicts with the State's long-term environmental policies or goals and guidelines as expressed in Chapter 344, HRS, and any revisions thereof and amendments thereto, court decisions, or executive orders.**

The State Environmental Policy and Guidelines are set forth in Chapter 344, Hawaii Revised Statutes (HRS). The proposed action is not contrary to the policies and guidelines set forth in Chapter 344, HRS.

4. **Substantially affects the economic welfare, social welfare, and cultural practices of the community or State.**

Based on the analysis presented herein, there are no long-term adverse economic, social welfare, or cultural impacts anticipated as a result of project implementation.

5. **Substantially affects public health.**

The proposed action is not anticipated to adversely impact public health. Grading operations and construction Best Management Practices (BMPs) as well as soil testing of the subgrade to levels within DOH's Environmental Action Levels (EALs), will ensure onsite stormwater runoff will be consistent with the requirements of the Clean Water Act.

The existing landfill has been in operation since 1969. Adverse effects to public health have not been identified from current operations. No long-term negative impacts to the public's health and welfare are anticipated as a result of the proposed action. Environmental monitoring of methane gas and groundwater quality continues to be carried out at the site and reported to DOH to ensure protection of public health.

6. **Involves substantial secondary impacts, such as population changes or effects on public facilities.**

The proposed project is not anticipated to result in secondary impacts such as population changes or increased demands on regional public facilities. The proposed project will ensure continuation of convenient and reliable solid waste services to the Hana region.

7. **Involves a substantial degradation of environmental quality.**

The existing landfill operations have been ongoing since 1969. During grading associated with the proposed clean-up and closure operations, appropriate BMPs will be utilized to ensure that potential adverse environmental effects are mitigated. No substantial degradation of the environment is anticipated as a result of project implementation. As mentioned previously, environmental monitoring of methane gas and groundwater is regularly carried out to ensure the environmental quality of landfill operations.

8. **Is individually limited but cumulatively has considerable effect upon the environment or involves a commitment for larger actions.**

The proposed project does not represent a commitment to larger actions. The proposed action addresses compliance requirements for an existing landfill to ensure continued service to the Hana region and with monitoring of landfill activities, the action is not anticipated to create or contribute to significant adverse long-term environmental effects.

9. **Substantially affects a rare, threatened, or endangered species, or its habitat.**

There are no known or identified habitats of rare, threatened, or endangered species of flora or fauna in the vicinity of the project site. Given the scale and location of the clean-up operations, no habitats or natural environments are anticipated to be adversely affected by the proposed project.

10. **Detrimentially affects air or water quality or ambient noise levels.**

Appropriate BMPs will be implemented during grading activities and removal of the municipal solid waste to ensure that adverse environmental impacts on air quality and ambient noise levels are mitigated. The DEM will continue to monitor the quality of groundwater in the project vicinity and report the findings to DOH to ensure that potential impacts to water quality are avoided.

In the long term, the proposed project is not anticipated to have a significant impact on air quality, water quality or noise parameters.

11. **Affects or likely to suffer damage by being located in an environmentally sensitive area such as a flood plain, tsunami zone, beach, erosion-prone area, geologically hazardous land, estuary, fresh water, or coastal waters.**

The clean-up area and lands utilized for active landfill area are not considered to be erosion prone or geologically hazardous. There are no estuaries or coastal waters which are adversely impacted by daily landfill operations. The proposed action is, therefore, not anticipated to adversely impact environmentally sensitive areas.

12. **Substantially affects scenic vistas and viewplanes identified in country or State plans or studies.**

The proposed project is not identified as a scenic vista or viewplane. The proposed action will not affect scenic corridors and coastal scenic and open space resources.

13. **Requires substantial energy consumption.**

The proposed project will result in the short-term commitment of fuel for equipment, vehicles and machinery during grading activities. However, the short-term energy demand is not considered substantive or excessive within the context of the region's overall energy consumption. In the long term, the project is not anticipated to create additional demands for energy consumption.

Based on the foregoing findings, it is anticipated that the proposed action will result in a Finding of No Significant Impact (FONSI) determination.

## **VIII. LIST OF PERMITS AND APPROVALS**

## **VIII. LIST OF PERMITS AND APPROVALS**

The following permits and approvals will be required prior to the implementation of the project:

### **State of Hawaii**

1. Hawaii Revised Statutes, Chapter 343 Compliance
2. National Pollutant Discharge Elimination System (NPDES) Permit, as applicable
3. Conservation District Use Permit, as applicable
4. Community Noise Permit, as applicable
5. Oversize/Overweight Vehicle Transport over State Highways Permit, as applicable

### **County of Maui**

1. Special Management Area (SMA) approval
2. Grading Permits

**IX. AGENCIES CONSULTED  
DURING THE PREPARATION  
OF THE DRAFT  
ENVIRONMENTAL  
ASSESSMENT; LETTERS  
RECEIVED AND RESPONSES  
TO SUBSTANTIVE  
COMMENTS**



## IX. AGENCIES CONSULTED DURING THE PREPARATION OF THE DRAFT ENVIRONMENTAL ASSESSMENT; LETTERS RECEIVED AND RESPONSES TO SUBSTANTIVE COMMENTS

The following agencies were consulted during the early consultation process in the preparation of the Draft Environmental Assessment (EA). Letters received and responses to substantive comments are included in this section.

### FEDERAL AGENCIES

1. Larry Yamamoto, State  
Conservationist  
Natural Resources Conservation  
Service  
**U.S. Department of Agriculture**  
P.O. Box 50004  
Honolulu, Hawaii 96850-0001
2. Ranae Ganske-Cerizo, Soil  
Conservationist  
Natural Resources Conservation  
Service  
**U.S. Department of Agriculture**  
77 Hookele Street, Suite 202  
Kahului, Hawaii 96732
3. Shelly Lynch, Chief, Regulatory  
Branch  
**U.S. Department of the Army**  
U.S. Army Engineer District,  
Honolulu  
Regulatory Branch, Building 230  
Fort Shafter, Hawaii 96858-5440
4. Wendy Wiltse, Environmental  
Scientist  
**U.S. Environmental Protection  
Agency**  
300 Ala Moana Blvd., Box 50003  
Honolulu, Hawaii 96850
5. Loyal A. Mehrhoff, Field Supervisor  
**U. S. Fish and Wildlife Service**  
300 Ala Moana Blvd., Rm. 3-122  
Box 50088  
Honolulu, Hawaii 96813

### STATE AGENCIES

6. Douglas G. Murdock, Acting  
Comptroller  
**Department of Accounting and  
General Services**  
1151 Punchbowl Street, #426  
Honolulu, Hawaii 96813
7. Scott Enright, Chair  
**Department of Agriculture**  
1428 South King Street  
Honolulu, Hawaii 96814-2512
8. Luis P. Salaveria, Acting Director  
State of Hawaii  
**Department of Business, Economic  
Development & Tourism**  
P.O. Box 2359  
Honolulu, Hawaii 96804
9. Heidi Meeker  
Office of Business Services  
**Department of Education**  
c/o Kalani High School  
4680 Kalanianaʻole Highway, #T-  
B1A  
Honolulu, Hawaii 96821
10. Virginia Pressler, M.D., Acting  
Director  
State of Hawaii  
**Department of Health**  
919 Ala Moana Blvd., Room 300  
Honolulu, Hawaii 96814

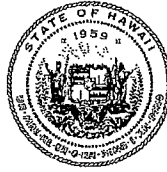
11. Alec Wong, P.E., Chief  
Clean Water Branch  
State of Hawaii  
**Department of Health**  
919 Ala Moana Blvd., Room 300  
Honolulu, Hawaii 96814
  12. Patti Kitkowski  
State of Hawaii  
**Department of Health**  
Maui Sanitation Branch  
54 South High Street, Room 300  
Wailuku, Hawaii 96793
  13. Laura McIntyre, AICP  
Environmental Planning Office  
**Department of Health**  
919 Ala Moana Blvd., Suite 312  
Honolulu, Hawaii 96814
  14. Carty Chang, Acting Chairperson  
State of Hawaii  
**Department of Land and Natural Resources**  
P. O. Box 621  
Honolulu, Hawaii 96809
  15. Alan Downer, Administrator  
State of Hawaii  
Department of Land and Natural Resources  
**State Historic Preservation Division**  
601 Kamokila Blvd., Room 555  
Kapolei, Hawaii 96707
  16. Morgan Davis  
State of Hawaii  
Department of Land and Natural Resources  
**State Historic Preservation Division**  
130 Mahalani Street  
Wailuku, Hawaii 96793
  17. Ford Fuchigami, Director  
State of Hawaii  
**Department of Transportation**  
869 Punchbowl Street  
Honolulu, Hawaii 96813
  18. Jobie Masagatani, Director  
**Hawaiian Home Lands Commission**  
P.O. Box 1879  
Honolulu, Hawaii 96805
  19. Jessica Wooley, Director  
**Office of Environmental Quality Control**  
235 S. Beretania Street, Suite 702  
Honolulu, Hawaii 96813
  20. Dr. Kamana'opono Crabbe, Chief  
Executive Officer  
**Office of Hawaiian Affairs**  
560 North Nimitz Highway, Suite 200  
Honolulu, Hawaii 96817
  21. Leo R. Asuncion, Jr., AICP, Acting  
Director  
State of Hawaii  
**Office of Planning**  
P. O. Box 2359  
Honolulu, Hawaii 96804
  22. Dan Orodener, Executive Officer  
State of Hawaii  
**State Land Use Commission**  
P.O. Box 2359  
Honolulu, Hawaii 96804
- COUNTY AGENCIES**
23. Kyle Ginoza, Director  
County of Maui  
**Department of Environmental Management**  
2050 Main Street, Suite 1C  
Wailuku, Hawaii 96793
  24. Jeffrey A. Murray, Chief  
County of Maui  
**Department of Fire and Public Safety**  
200 Dairy Road  
Kahului, Hawaii 96732
  25. Jo-Ann Ridao, Director  
County of Maui  
**Department of Housing and Human Concerns**  
One Main Plaza  
2200 Main Street, Suite 546  
Wailuku, Hawaii 96793
  26. Kaala Buenconsejo, Director  
County of Maui  
**Department of Parks and Recreation**  
700 Halia Nakoia Street, Unit 2  
Wailuku, Hawaii 96793

27. William Spence, Director  
County of Maui  
**Department of Planning**  
2200 Main Street, Suite 315  
Wailuku, Hawaii 96793
28. Tivoli Faaumu, Chief  
County of Maui  
**Police Department**  
55 Mahalani Street  
Wailuku, Hawaii 96793
29. David Goode, Director  
County of Maui  
**Department of Public Works**  
200 South High Street  
Wailuku, Hawaii 96793
30. Jo Anne Johnson Winer, Director  
County of Maui  
**Department of Transportation**  
200 South High Street  
Wailuku, Hawaii 96793
31. David Taylor, Director  
County of Maui  
**Department of Water Supply**  
200 South High Street  
Wailuku, Hawaii 96793
32. Honorable Robert Carroll  
**Maui County Council**  
200 South High Street  
Wailuku, Hawaii 96793

**OTHER**

33. John Kahalehoe  
**Hana Community Association**  
P. O. Box 471  
Hana, Hawaii 96713

DAVID Y. IGE  
GOVERNOR



MAR 09 2015

DOUGLAS MURDOCK  
Comptroller

**STATE OF HAWAII**  
**DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES**

P.O. BOX 119, HONOLULU, HAWAII 96810-0119

MAR - 6 2015

(P)1041.5

Mr. Mich Hirano, AICP, Senior Advisor  
Munekiyo & Hiraga, Inc.  
305 High Street, Suite 104  
Wailuku, Hawaii 96793

Dear Mr. Hirano:

Subject: Early Consultation for  
Proposed Clean-Up and Closure of Makai Hana Landfill  
Hana, Maui, Hawaii  
TMK: (2) 1-3-006P por 12

Thank you for the opportunity to comment on the subject project. The proposed project does not impact any of the Department of Accounting and General Services' projects or existing facilities. Therefore, we have no comments to offer at this time.

If you have any questions, your staff may contact Ms. Gayle Takasaki of the Public Works Division at (808) 586-0584.

Sincerely,

A handwritten signature in dark ink, appearing to read "Douglas Murdock", written over a horizontal line.

DOUGLAS MURDOCK  
Comptroller



**MUNEKIYO HIRAGA**

Planning. Project Management. Sustainable Solutions.

Michael T. Munekiyo  
PRESIDENT

Karlynn K. Fukuda  
EXECUTIVE VICE PRESIDENT

Mark Alexander Roy  
VICE PRESIDENT

Tessa Munekiyo Ng  
VICE PRESIDENT

Mitsuru "Mich" Hirano  
SENIOR ADVISOR

July 22, 2015

Douglas Murdock, Comptroller  
Department of Accounting and General Services  
State of Hawaii  
P.O. Box 119  
Honolulu, Hawaii 96810-0119

SUBJECT: Early Consultation Letter for the Proposed Clean-Up and Closure  
for the Makai Hana Landfill, Hana, Maui ((P)1041.5)

Dear Mr. Murdock:

Thank you for your letter of March 6, 2015 responding to our request for early consultation in preparation of a Draft Environmental Assessment (EA) for the proposed Makai Hana Landfill project. On behalf of the County of Maui Department of Environmental Management we appreciate your letter of confirmation that the proposed project does not affect your Department's projects or facilities and that you have no comments at this time.

Again, thank you for your participation in the Chapter 343, Hawaii Revised Statutes review process. A copy of your letter will be included in the Draft EA. A copy of the Draft EA will be sent to your office for review and comment. In the meantime, if there are any questions or if additional information is needed, please contact me at (808) 244-2015.

Very truly yours,

Colleen Suyama  
Senior Associate

CS:lh

Copy to: Elaine Baker, Department of Environmental Management  
Ali Mehrazarin, A-MEHR

K:\DATA\A-MEHR\HanaSolidWaste\ECL Response Letters\DAGS.ecresponse.letter.docx



FEB 20 2015

KATHRYN S. MATAYOSHI  
SUPERINTENDENT

**STATE OF HAWAII**  
**DEPARTMENT OF EDUCATION**  
P.O. BOX 2360  
HONOLULU, HAWAII 96804

OFFICE OF SCHOOL FACILITIES AND SUPPORT SERVICES

February 17, 2015

Munekiyo & Hiraga, Inc.  
305 High Street, Suite 104  
Wailuku, Hawaii 96793

Attn: Mich Hirano, AICP, Senior Advisor

**Re: Early Consultation Request for the Proposed Clean-up and Closure of the Makai Hana  
Landfill, Hana, Maui, Hawaii, TMK: (2)1-3-006:012**

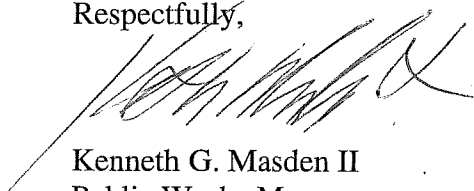
Dear Mr. Hirano:

The Department of Education (DOE) has reviewed the early consultation request for the proposed clean-up and closure of the Makai Hana landfill.

The DOE has no comment to offer regarding this project.

We appreciate the opportunity to provide comments. If you have any questions, please call Heidi Meeker of the Facilities Development Branch at (808) 377-8301.

Respectfully,



Kenneth G. Masden II  
Public Works Manager  
Planning Section

KGM:jmb

Michael T. Munekiyo  
PRESIDENT

Karlynn K. Fukuda  
EXECUTIVE VICE PRESIDENT

Mark Alexander Roy  
VICE PRESIDENT

Tessa Munekiyo Ng  
VICE PRESIDENT

Mitsuru "Mich" Hirano  
SENIOR ADVISOR

July 22, 2015

Kenneth G. Masden II  
Public Works Manager  
Planning Section  
Department of Education  
P.O. Box 2360  
Honolulu, Hawaii 96804

SUBJECT: Early Consultation Letter for the Proposed Clean-Up and Closure  
for the Makai Hana Landfill, Hana, Maui

Dear Mr. Masden:

Thank you for your letter of February 17, 2015 responding to our request for early consultation in preparation of a Draft Environmental Assessment (EA) for the proposed Makai Hana Landfill project. On behalf of the County of Maui Department of Environmental Management we appreciate your letter of confirmation that you have no comments to offer.

Again, thank you for your participation in the Chapter 343, Hawaii Revised Statutes review process. A copy of your letter will be included in the Draft EA. A copy of the Draft EA will be sent to your office for review and comment. In the meantime, if there are any questions or if additional information is needed, please contact me at (808) 244-2015.

Very truly yours,



Colleen Suyama  
Senior Associate

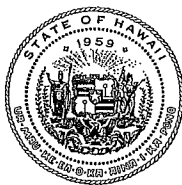
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Copy to: Elaine Baker, Department of Environmental Management  
Ali Mehrazarin, A-MEHR

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FEB 17 2015

DAVID Y. IGE  
GOVERNOR OF HAWAII



VIRGINIA PRESSLER, M.D.  
DIRECTOR OF HEALTH

STATE OF HAWAII  
DEPARTMENT OF HEALTH  
P. O. BOX 3378  
HONOLULU, HI 96801-3378

In reply, please refer to:  
File:

02010PGH.15

February 12, 2015

Mr. Mich Hirano, AICP  
Senior Advisor  
Munekiyo & Hiraga, Inc.  
305 High Street, Suite 104  
Wailuku, Hawaii 96793

Dear Mr. Hirano:

**SUBJECT: Comments on Early Consultation Request for the Proposed Clean-up and Closure of the Makai Hana Landfill  
Hana, Island of Maui, Hawaii**

The Department of Health (DOH), Clean Water Branch (CWB), acknowledges receipt of your letter, dated February 5, 2015, requesting comments on your project. The DOH-CWB has reviewed the subject document and offers these comments. Please note that our review is based solely on the information provided in the subject document and its compliance with the Hawaii Administrative Rules (HAR), Chapters 11-54 and 11-55. You may be responsible for fulfilling additional requirements related to our program. We recommend that you also read our standard comments on our website at: <http://health.hawaii.gov/epo/files/2013/05/Clean-Water-Branch-Std-Comments.pdf>

1. Any project and its potential impacts to State waters must meet the following criteria:
  - a. Antidegradation policy (HAR, Section 11-54-1.1), which requires that the existing uses and the level of water quality necessary to protect the existing uses of the receiving State water be maintained and protected.
  - b. Designated uses (HAR, Section 11-54-3), as determined by the classification of the receiving State waters.
  - c. Water quality criteria (HAR, Sections 11-54-4 through 11-54-8).
2. You may be required to obtain National Pollutant Discharge Elimination System (NPDES) permit coverage for discharges of wastewater, including storm water runoff, into State surface waters (HAR, Chapter 11-55).



For NPDES general permit coverage, a Notice of Intent (NOI) form must be submitted at least 30 calendar days before the commencement of the discharge. An application for a NPDES individual permit must be submitted at least 180 calendar days before the commencement of the discharge. To request NPDES permit coverage, you must submit the applicable form ("CWB Individual NPDES Form" or "CWB NOI Form") through the e-Permitting Portal and the hard copy certification statement with the respective filing fee (\$1,000 for an individual NPDES permit or \$500 for a Notice of General Permit Coverage). Please open the e-Permitting Portal website located at: <https://eha-cloud.doh.hawaii.gov/epermit/>. You will be asked to do a one-time registration to obtain your login and password. After you register, click on the Application Finder tool and locate the appropriate form. Follow the instructions to complete and submit the form.

3. If your project involves work in, over, or under waters of the United States, it is highly recommended that you contact the Army Corp of Engineers, Regulatory Branch (Tel: 835-4303) regarding their permitting requirements.

Pursuant to Federal Water Pollution Control Act [commonly known as the "Clean Water Act" (CWA)], Paragraph 401(a)(1), a Section 401 Water Quality Certification (WQC) is required for "[a]ny applicant for Federal license or permit to conduct any activity including, but not limited to, the construction or operation of facilities, which may **result** in any discharge into the navigable waters..." (emphasis added). The term "discharge" is defined in CWA, Subsections 502(16), 502(12), and 502(6); Title 40 of the Code of Federal Regulations, Section 122.2; and Hawaii Administrative Rules (HAR), Chapter 11-54.

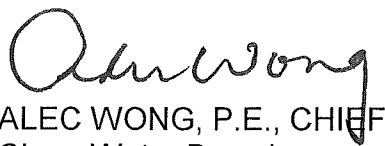
4. Please note that all discharges related to the project construction or operation activities, whether or not NPDES permit coverage and/or Section 401 WQC are required, must comply with the State's Water Quality Standards. Noncompliance with water quality requirements contained in HAR, Chapter 11-54, and/or permitting requirements, specified in HAR, Chapter 11-55, may be subject to penalties of \$25,000 per day per violation.
5. It is the State's position that all projects must reduce, reuse, and recycle to protect, restore, and sustain water quality and beneficial uses of State waters. Project planning should:
  - a. Treat storm water as a resource to be protected by integrating it into project planning and permitting. Storm water has long been recognized as a source of irrigation that will not deplete potable water resources. What is often overlooked is that storm water recharges ground water supplies and feeds streams and estuaries; to ensure that these water cycles are not disrupted, storm water cannot be relegated as a waste product of impervious surfaces. Any project planning must recognize storm water as an asset that sustains and protects natural ecosystems and traditional beneficial uses of State waters, like community beautification, beach going, swimming, and fishing. The approaches

necessary to do so, including low impact development methods or ecological bio-engineering of drainage ways must be identified in the planning stages to allow designers opportunity to include those approaches up front, prior to seeking zoning, construction, or building permits.

- b. Clearly articulate the State's position on water quality and the beneficial uses of State waters. The plan should include statements regarding the implementation of methods to conserve natural resources (e.g. minimizing potable water for irrigation, gray water re-use options, energy conservation through smart design) and improve water quality.
- c. Consider storm water Best Management Practice (BMP) approaches that minimize the use of potable water for irrigation through storm water storage and reuse, percolate storm water to recharge groundwater to revitalize natural hydrology, and treat storm water which is to be discharged.
- d. Consider the use of green building practices, such as pervious pavement and landscaping with native vegetation, to improve water quality by reducing excessive runoff and the need for excessive fertilization, respectively.
- e. Identify opportunities for retrofitting or bio-engineering existing storm water infrastructure to restore ecological function while maintaining, or even enhancing, hydraulic capacity. Particular consideration should be given to areas prone to flooding, or where the infrastructure is aged and will need to be rehabilitated.

If you have any questions, please visit our website at: <http://health.hawaii.gov/cwb/>, or contact the Engineering Section, CWB, at (808) 586-4309.

Sincerely,



ALEC WONG, P.E., CHIEF  
Clean Water Branch

GH:bk

July 22, 2015

Alec Wong, P.E., Chief  
Clean Water Branch  
Department of Health  
P.O. Box 3378  
Honolulu, Hawaii 96801-3378

SUBJECT: Early Consultation Letter for the Proposed Clean-Up and Closure  
for the Makai Hana Landfill, Hana, Maui (02010PGH.15)

Dear Mr. Wong:

Thank you for your letter of February 12, 2015 responding to our request for early consultation in preparation of a Draft Environmental Assessment (EA) for the proposed Makai Hana Landfill project. As recommended, the County of Maui Department of Environmental Management (DEM) will review the standard comments on your website and applicable comments will be complied with. Further, on behalf of the DEM, we offer the following information which addresses your comments in the order listed in your letter:

1. We acknowledge that the project must meet the Department of Health (DOH) water quality requirements of Hawaii Administrative Rules (HAR), Chapter 11-54.
2. As may be required, a National Pollutant Discharge Elimination System (NPDES) permit will be submitted to the DOH for approval prior to the initiation of construction.
3. We acknowledge that work in, over, or under waters of the United States may require additional permitting from the U.S. Army Corps of Engineers (USACE), Regulatory Branch. Coordination will be carried out with the USACE to determine Department of Army Permit requirements.
4. We acknowledge the project must comply with the State's Water Quality Standards and non-compliance may be subject to penalties of \$25,000.00 per day per violation.

Alec Wong, P.E., Chief  
July 22, 2015  
Page 2

5. We acknowledge that the project should reduce, reuse, and recycle to protect, restore, and sustain water quality and beneficial uses of State waters. As such, we have reviewed this information, and as appropriate, will incorporate recommended measures into the project.

Again, thank you for your participation in the Chapter 343, Hawaii Revised Statutes review process. We appreciate your input and a copy of your letter will be included in the Draft EA. A copy of the Draft EA will be sent to your office for review and comment. In the meantime, if there are any questions or if additional information is needed, please contact me at (808) 244-2015.

Very truly yours,



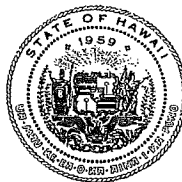
Colleen Suyama  
Senior Associate

CS:lh

Copy to: Elaine Baker, Department of Environmental Management  
Ali Mehrazarin, A-MEHR

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DAVID Y. IGE  
GOVERNOR OF HAWAII



FEB 26 2015

VIRGINIA PRESSLER, M.D.  
DIRECTOR OF HEALTH

LORRIN W. PANG, M.D., M.P.H.  
DISTRICT HEALTH OFFICER

STATE OF HAWAII  
DEPARTMENT OF HEALTH  
MAUI DISTRICT HEALTH OFFICE  
54 HIGH STREET  
WAILUKU, HAWAII 96793-3378

February 24, 2015

Mr. Mich Hirano, AICP  
Senior Advisor  
Munekiyo & Hiraga, Inc.  
305 High Street, Suite 104  
Wailuku, Hawaii 96793

Dear Mr. Hirano:

**Subject: Early Consultation Request for the Proposed Clean-up and Closure  
for the Makai Hana Landfill, Hana, Maui, Hawaii**

Thank you for the opportunity to review this project. We have the following comments to offer:

National Pollutant Discharge Elimination System (NPDES) permit coverage may be required for this project. The Clean Water Branch should be contacted at 808 586-4309.

It is strongly recommended that the Standard Comments found at the Department's website: <http://health.hawaii.gov/epo/home/landuse-planning-review-program/> be reviewed and any comments specifically applicable to this project should be adhered to.

Should you have any questions, please call me at 808 984-8230 or E-mail me at [patricia.kitkowski@doh.hawaii.gov](mailto:patricia.kitkowski@doh.hawaii.gov).

Sincerely,

A handwritten signature in black ink that reads "Patti Kitkowski". The signature is written in a cursive, flowing style.

Patti Kitkowski  
District Environmental Health Program Chief

c EPO

July 22, 2015

Patti Kitkowski  
District Environmental Health Program Chief  
Department of Health  
54 High Street  
Wailuku, Hawaii 96793

SUBJECT: Early Consultation Letter for the Proposed Clean-Up and Closure  
for the Makai Hana Landfill, Hana, Maui

Dear Ms. Kitkoswki:

Thank you for your letter of February 24, 2015 responding to our request for early consultation in preparation of a Draft Environmental Assessment (EA) for the proposed Makai Hana Landfill project. On behalf of the County of Maui Department of Environmental Management (DEM) we offer the following information, which addresses your comments in the order listed in your letter:

1. As may be required, a National Pollutant Discharge Elimination System (NPDES) permit will be submitted to the Department of Health (DOH).

Also, DEM will review the standard comments provided on the Department's website and address applicable requirements prior to project implementation.

Patti Kitkowski  
July 22, 2015  
Page 2

Again, thank you for your participation in the Chapter 343, Hawaii Revised Statutes review process. A copy of your letter will be included in the Draft EA. A copy of the Draft EA will be sent to your office for review and comment. In the meantime, if there are any questions or if additional information is needed, please contact me at 244-2015.

Very truly yours,



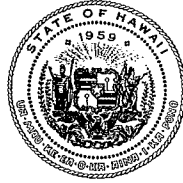
Colleen Suyama  
Senior Associate

CS:lh

Copy to: Elaine Baker, Department of Environmental Management  
Ali Mehrazarin, A-MEHR

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DAVID Y. IGE  
GOVERNOR OF HAWAII



VIRGINIA PRESSLER, M.D.  
DIRECTOR OF HEALTH

**STATE OF HAWAII**  
**DEPARTMENT OF HEALTH**  
P. O. BOX 3378  
HONOLULU, HI 96801-3378

In reply, please refer to:  
File:

EPO 15-032

February 12, 2015

Mr. Mark Alexander Roy, AICP  
Vice President  
Munekiyo & Hiraga, Inc.  
305 High Street, Suite 104  
Wailuku, Hawaii 96793

Attention: Mich Hirano, AICP, Senior Advisor

Dear Mr. Roy:

**SUBJECT: Early Consultation (EC) Request for the Proposed Clean-up and Closure of the  
Makai Hana Landfill, Hana, Maui, Hawaii**

The Department of Health (DOH), Environmental Planning Office (EPO), acknowledges receipt of your EC request to our office on February 5, 2015. Thank you for allowing us to review and comment on the proposed project. The application was routed to the District Health Office on Maui, Clean Water Branch and the Solid Hazardous Waste Branch. They will provide specific comments to you if appropriate. EPO recommends that you review the standard comments and available strategies to support sustainable and healthy design provided at:  
<http://health.hawaii.gov/epo/home/landuse-planning-review-program/>. Projects are required to adhere to all applicable standard comments.

We encourage you to examine and utilize the Hawaii Environmental Health Portal. The portal provides links to our e-Permitting Portal, Environmental Health Warehouse, Groundwater Contamination Viewer, Hawaii Emergency Response Exchange, Hawaii State and Local Emission Inventory System, Water Pollution Control Viewer, Water Quality Data, Warnings, Advisories and Postings. The Portal is continually updated. Please visit it regularly at:  
<https://eha-cloud.doh.hawaii.gov>

You may also wish to review the revised Water Quality Standards Maps that have been updated for all islands. The Water Quality Standards Map for Maui can be found at:  
[http://health.hawaii.gov/cwb/files/2013/05/WQS\\_20140708\\_Maui\\_Reduced.pdf](http://health.hawaii.gov/cwb/files/2013/05/WQS_20140708_Maui_Reduced.pdf)

We request that you utilize all of this information on your proposed project to increase sustainable, innovative, inspirational, transparent and healthy design.

Mahalo nui loa,

  
Laura Leialoha Phillips McIntyre, AICP  
Program Manager, Environmental Planning Office

c: DLNR OCCL {via email: [dlnr.occl@hawaii.gov](mailto:dlnr.occl@hawaii.gov)}  
Elaine Baker, County of Maui {via email: [Elaine.Baker@co.maui.hi.us](mailto:Elaine.Baker@co.maui.hi.us)}  
DHO Maui, CWB, SHWB {via email only}





**MUNEKIYO HIRAGA**

Planning. Project Management. Sustainable Solutions.

Michael T. Munekiyo  
PRESIDENT

Karlynn K. Fukuda  
EXECUTIVE VICE PRESIDENT

Mark Alexander Roy  
VICE PRESIDENT

Tessa Munekiyo Ng  
VICE PRESIDENT

Mitsuru "Mich" Hirano  
SENIOR ADVISOR

July 22, 2015

Laura Leialoha Phillips McIntyre, AICP, Program Manager  
Department of Health  
Environmental Planning Office  
State of Hawaii  
P.O. Box 3378  
Honolulu, Hawaii 96801-3378

SUBJECT: Early Consultation Letter for the Proposed Clean-Up and Closure  
for the Makai Hana Landfill, Hana, Maui (EPO 15-032)

Dear Ms. McIntyre:

Thank you for your letter dated February 12, 2015, providing early consultation comments on the Draft Environmental Assessment (EA) for the proposed Makai Hana Landfill project. As recommended, the Department of Environmental Management (DEM) will review the standard comments and other information provided in your letter. Also, on behalf of DEM we will review the updated Water Quality Standards Maps for Maui island.

Laura Leialoha Phillips McIntyre, AICP, Program Manager  
July 22, 2015  
Page 2

Again, thank you for your participation in the Chapter 343, Hawaii Revised Statutes review process. We appreciate your input and a copy of your letter will be included in the Draft EA. A copy of the Draft EA will be sent to your office for review and comment. In the meantime, if there are any questions or if additional information is needed, please contact me at (808) 244-2015.

Very truly yours,



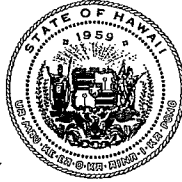
Colleen Suyama  
Senior Associate

CS:lh

Copy to: Elaine Baker, Department of Environmental Management  
Ali Mehrazarin, A-MEHR

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DAVID Y. IGE  
GOVERNOR OF HAWAII



MAR 16 2015

VIRGINIA PRESSLER, M.D.  
DIRECTOR OF HEALTH

**STATE OF HAWAII**  
**DEPARTMENT OF HEALTH**  
P. O. BOX 3378  
HONOLULU, HI 96801-3378

In reply, please refer to:  
File:

March 11, 2015

S0313KMK

Mr. Mark Alexander Roy, AICP  
Vice President  
Munekiyo and Hiraga, Inc.  
305 High Street, Suite 104  
Wailuku, Hawaii 96793

Dear Mr. Roy:


**SUBJECT: Environmental Impact Statement Preparation Notice  
Makai Hana Landfill**

Thank you for the opportunity to review and provide comments on the subject document. The Solid Waste Section (SWS) of the Solid and Hazardous Waste Branch has been in contact with the County of Maui (County) regarding the cleanup and closure of the Makai portion of the Hana Landfill.

Upon review of the information provided by the County, it has been determined that the proposed activities are subject to state solid waste regulation and associated permitting requirements. Since a solid waste permit application has been submitted by the County for the remainder of the Hana Landfill, the applicable SWS concerns pertaining to the cleanup and closure of the Makai portion of the landfill will be addressed as part of the permit application and the solid waste regulatory process.

Please contact Mr. Kevin Kihara of our Solid Waste Section at (808) 586-4226 with any questions or comments regarding this letter.

Sincerely,

  
STEVEN Y.K. CHANG, P.E., CHIEF  
Solid and Hazardous Waste Branch

c: Department of Health-Environmental Planning Office  
Maui District Health Office



**MUNEKIYO HIRAGA**

Planning, Project Management, Sustainable Solutions.

Michael T. Munekiyo  
PRESIDENT

Karlynn K. Fukuda  
EXECUTIVE VICE PRESIDENT

Mark Alexander Roy  
VICE PRESIDENT

Tessa Munekiyo Ng  
VICE PRESIDENT

Mitsuru "Mich" Hirano  
SENIOR ADVISOR

July 22, 2015

Steven Y.K. Chang, P.E., Chief  
Solid and Hazardous Waste Branch  
Department of Health  
State of Hawaii  
P.O. Box 3378  
Honolulu, Hawaii 96801-3378

SUBJECT: Early Consultation Letter for the Proposed Clean-Up and Closure  
for the Makai Hana Landfill, Hana, Maui (S0313KMK)

Dear Mr. Chang:

Thank you for your letter, dated March 11, 2015, providing early consultation comments on the Draft Environmental Assessment (EA) for the proposed Makai Hana Landfill project. On behalf of the County of Maui, Department of Environmental Management (DEM), we acknowledge that the Solid Waste Section (SWS) of the Solid and Hazardous Waste Branch will conduct its review during processing of the solid waste permit application (currently under review) and solid waste regulatory process.

We wish to note that the letter request was for early consultation in preparation of a Draft EA and not an Environmental Impact Statement Preparation Notice as indicated in your subject heading. The need for an Environmental Impact Statement for the project will be determined upon review of the Final EA.

Steven Y.K. Chang, P.E., Chief  
July 22, 2015  
Page 2

Again, thank you for your participation in the Chapter 343, Hawaii Revised Statutes review process. We appreciate your input and a copy of your letter will be included in the Draft EA. A copy of the Draft EA will be sent to your office for review and comment. In the meantime, if there are any questions or if additional information is needed, please contact me at (808) 244-2015.

Very truly yours,



Colleen Suyama  
Senior Associate

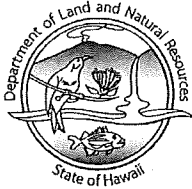
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Copy to: Elaine Baker, Department of Environmental Management  
Ali Mehrazarin, A-MEHR

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MAR 06 2015

DAVID Y. IGE  
GOVERNOR OF HAWAII



STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES

POST OFFICE BOX 621  
HONOLULU, HAWAII 96809

March 6, 2015

CARTY S. CHANG  
INTERIM CHAIRPERSON  
BOARD OF LAND AND NATURAL RESOURCES  
COMMISSION ON WATER RESOURCE MANAGEMENT

DANIEL S. QUINN  
INTERIM FIRST DEPUTY

W. ROY HARDY  
ACTING DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES  
BOATING AND OCEAN RECREATION  
BUREAU OF CONVEYANCES  
COMMISSION ON WATER RESOURCE MANAGEMENT  
CONSERVATION AND COASTAL LANDS  
CONSERVATION AND RESOURCES ENFORCEMENT  
ENGINEERING  
FORESTRY AND WILDLIFE  
HISTORIC PRESERVATION  
KAIHIOOLAWE ISLAND RESERVE COMMISSION  
LAND  
STATE PARKS

Munekiyo & Hiraga, Inc.  
Attention: Mr. Mich Hirano, AICP  
305 High Street, Suite 104  
Wailuku, Hawaii 96793

via email: [planning@mhplanning.com](mailto:planning@mhplanning.com)

Dear Mr. Hirano:

SUBJECT: Early Consultation Request for the Proposed Clean-up and Closure of the  
Makai Hana Landfill

Thank you for the opportunity to review and comment on the subject matter. In addition to the comments previously sent you on February 27, 2015 enclosed are comments from the State Historic Preservation Division on the subject matter. Should you have any questions, please feel free to call Lydia Morikawa at 587-0410. Thank you.

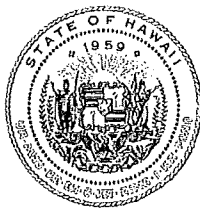
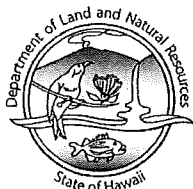
Sincerely,

A handwritten signature in black ink, appearing to read "Kevin E. Moore".

Kevin E. Moore  
Acting Land Administrator

Enclosure(s)  
cc: Central Files

DAVID Y. IGE  
GOVERNOR OF HAWAII



STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES

STATE HISTORIC PRESERVATION DIVISION  
KAKUHIHEWA BUILDING  
601 KAMOKILA BLVD, STE 555  
KAPOLEI, HAWAII 96707

CARTY S. CHANG  
INTERIM CHAIRPERSON  
BOARD OF LAND AND NATURAL RESOURCES  
COMMISSION ON WATER RESOURCE MANAGEMENT

DANIEL S. QUINN  
INTERIM FIRST DEPUTY

W. ROY HARDY  
ACTING DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES  
BOATING AND OCEAN RECREATION  
BUREAU OF CONVEYANCES  
COMMISSION ON WATER RESOURCE MANAGEMENT  
CONSERVATION AND COASTAL LANDS  
CONSERVATION AND RESOURCES ENFORCEMENT  
ENGINEERING  
FORESTRY AND WILDLIFE  
HISTORIC PRESERVATION  
KAHOOLAWE ISLAND RESERVE COMMISSION  
LAND  
STATE PARKS

March 6, 2015

MEMORANDUM

TO: Russell Y. Tsuji, Administrator  
DLNR Land Division  
Via email to: [Russell.Y.Tsuji@hawaii.gov](mailto:Russell.Y.Tsuji@hawaii.gov)

Log No: 2015.00536  
Doc No: 1503JP01  
Archaeology

A handwritten signature in black ink, appearing to read "Morgan E. Davis".

FROM: Morgan E. Davis, Lead Archaeologist, Maui Section

SUBJECT: Chapter 6E-8 Historic Preservation Review -  
Early Consultation Request for the Proposed Clean-up and Closure of the Makai Hana Landfill  
Kawaipapa Ahupua'a, Hāna District, Island of Maui  
TMK: (2) 1-3-006:007 and 012 (por.)

Thank you for the opportunity to comment on the submittal that was received by our staff on February 19, 2015. Documentation includes several copies of an early consultation request letter from the contracted consultant, Munekiyo and Hiraga, Inc. The letter explains that Executive Order 3304 (signed November 16, 1985) transferred the management and control of approximately 29 acres of State-owned land to the County of Maui for the *Hana Landfill*, formerly known as the "Hana Garbage Dump Site."

Parcel 012 lies within both the State Land Use "Agricultural" and "Conservation" districts. Currently, the County of Maui is in the process of extending the boundaries of the landfill site to add approximately 45.2 acres of adjacent land to resolve an encroachment of the current active landfill area and to provide an adequate buffer zone to surrounding lands. The additional lands will be transferred from the State to the County by Executive Order.

A search of our records indicates an archaeological inventory survey has not occurred. We previously recommended that an archaeological inventory survey be conducted on the subject parcels (*Log 2003.1285 Doc 0307CD49; Log 2003.2184 Doc 0310MK29; Log 2004.0785 Doc 0403MK02; Log 2007.2053 Doc 0807JP10, and Log 2012.2957 Doc 1301JP11*). Traditional Hawaiian agriculture and habitation sites in addition to human burials and ceremonial features are noted for the area. Previously documented sites in the vicinity include pre-Contact temporary and permanent habitation sites, burials, heiau, rock terraces, enclosures, rock mounds, modified rock outcrops, rock alignments, platforms, rock overhangs, walled cave shelters, as well as post-Contact historic properties related to plantation and ranching activities. Prior land alterations have occurred on some sections; however, there may be undisturbed areas within both parcels.

We cannot fully determine any potential impacts the proposed project may have to historic properties until an archaeological survey report has been reviewed and accepted by our division. We believe that **historic properties may be affected** by the proposed project, and recommend that an **archaeological inventory survey** be conducted. The archaeological survey shall be completed by a permitted contracted archaeological firm with the resulting report submitted to our office for review and approval pursuant to Hawai'i Administrative Rule §13-276. Once the archaeological report is accepted, appropriate mitigation measures, if needed, will be recommended.

DLNR Land Division  
March 6, 2015  
Page 2

Please contact Jenny Pickett at (808) 243-1285 or [Jenny.L.Pickett@hawaii.gov](mailto:Jenny.L.Pickett@hawaii.gov) if there are any questions or concerns regarding this memorandum.

cc:	County of Maui Department of Planning ( <a href="mailto:Planning@co.maui.hi.us">Planning@co.maui.hi.us</a> )	County of Maui Department of Public Works – DSA ( <a href="mailto:Rence.Segundo@co.maui.hi.us">Rence.Segundo@co.maui.hi.us</a> )	County of Maui Cultural Resources Commission ( <a href="mailto:Annalise.Kehler@co.maui.hi.us">Annalise.Kehler@co.maui.hi.us</a> )
	Mark Alexander Roy, AICP, Vice President Munekiyo Hiraga ( <a href="mailto:mark@mhplanning.com">mark@mhplanning.com</a> )		





**MUNEKIYO HIRAGA**

Planning. Project Management. Sustainable Solutions.

Michael T. Munekiyo  
PRESIDENT

Karlynn K. Fukuda  
EXECUTIVE VICE PRESIDENT

Mark Alexander Roy  
VICE PRESIDENT

Tessa Munekiyo Ng  
VICE PRESIDENT

Mitsuru "Mich" Hirano  
SENIOR ADVISOR

July 22, 2015

Kevin E. Moore, Acting Land Administrator  
Land Division  
Department of Land and Natural Resources  
P.O. Box 621  
Honolulu, Hawaii 96809

SUBJECT: Early Consultation Letter for the Proposed Clean-Up and Closure  
for the Makai Hana Landfill, Hana, Maui (Log No: 2015.00536,  
Doc. No: 1503JP01)

---

Dear Mr. Moore:

Thank you for your letter, dated March 6, 2015, providing early consultation comments on the Draft Environmental Assessment (EA) for the proposed Makai Hana Landfill project. On behalf of the County of Maui, Department of Environmental Management, please be advised that archaeologist Erik Fredericksen of Xamanek Researches, LLC has followed up with the State Historic Preservation Division, Maui Office, to discuss applicable archaeological review processing requirements for this project. As a result of this coordination, an archaeological investigation will be carried out with subsurface testing around the perimeter of the Makai Hana Landfill boundary. The results of the archaeological investigation will be included in the Draft EA.

Kevin E. Moore, Acting Land Administrator  
July 22, 2015  
Page 2

Again, thank you for your participation in the Chapter 343, Hawaii Revised Statutes review process. We appreciate your input and a copy of your letter will be included in the Draft EA. A copy of the Draft EA will be sent to your office for review and comment. In the meantime, if there are any questions or if additional information is needed, please contact me at (808) 244-2015.

Very truly yours,



Colleen Suyama  
Senior Associate

CS:lh

Copy to: Elaine Baker, Department of Environmental Management  
Ali Mehrazarin, A-MEHR  
Erik Fredericksen, Xamanek Researches, LLC  
Morgan Davis, Lead Archaeologist, Maui Section

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DAVID Y. IGE  
GOVERNOR



STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
869 PUNCHBOWL STREET  
HONOLULU, HAWAII 96813-5097

MAR 05 2015

FORD N. FUCHIGAMI  
DIRECTOR

Deputy Directors  
JADE T. BUTAY  
ROSS M. HIGASHI  
EDWIN H. SNIFFEN  
DARRELL T. YOUNG

IN REPLY REFER TO:

STP 8.1762

February 25, 2015

Mr. Mich Hirano, AICP  
Senior Advisor  
Munekiyo & Hiraga, Inc.  
305 High Street, Suite 104  
Wailuku, Hawaii 96793

Dear Mr. Hirano:

Subject: Makai Hana Landfill Clean-up and Closure  
Early Consultation for Environmental Assessment  
Hana, Maui, Hawaii  
TMK: (2) 1-3-006:012 (por.)

The subject project is not expected to significantly impact the State highway facility. However, the developer is required to obtain a permit from Department of Transportation (DOT) Highways Division, Maui District Office for the transport of oversized and/or overweight materials and equipment on State highway facilities.

If there are any questions, please contact Mr. Norren Kato of the DOT Statewide Transportation Planning Office at telephone number (808) 831-7976.

Sincerely,

A handwritten signature in black ink, appearing to read "Ford N. Fuchigami", is written over a horizontal line.

FORD N. FUCHIGAMI  
Director of Transportation



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Michael T. Munekiyo  
PRESIDENT

Karlynn K. Fukuda  
EXECUTIVE VICE PRESIDENT

Mark Alexander Roy  
VICE PRESIDENT

Tessa Munekiyo Ng  
VICE PRESIDENT

Mitsuru "Mich" Hirano  
SENIOR ADVISOR

July 22, 2015

Ford N. Fuchigami, Director  
Department of Transportation  
State of Hawaii  
869 Punchbowl Street  
Honolulu, Hawaii 96813-5097

SUBJECT: Early Consultation Letter for the Proposed Clean-Up and Closure  
for the Makai Hana Landfill, Hana, Maui (STP 8.1762)

Dear Mr. Fuchigami:

Thank you for your letter, dated February 25, 2015, providing early consultation comments on the Draft Environmental Assessment (EA) for the proposed Makai Hana Landfill project. On behalf of the County of Maui, Department of Environmental Management (DEM), please be advised that transport of oversized and/or overweight materials and equipment on State Highways is not anticipated. Construction activity will be within the Hana Landfill boundaries. However, scrap metal will be hauled out and transported to Kahului utilizing State Highway facilities. A permit from the Department of Transportation Highways Division, Maui District Office will be obtained, as necessary.

Ford N. Fuchigami, Director  
July 22, 2015  
Page 2

Again, thank you for your participation in the Chapter 343, Hawaii Revised Statutes review process. We appreciate your input and a copy of your letter will be included in the Draft EA. A copy of the Draft EA will be sent to your office for review and comment. In the meantime, if there are any questions or if additional information is needed, please contact me at (808) 244-2015.

Very truly yours,

A handwritten signature in black ink, appearing to read 'Colleen Suyama', with a long horizontal flourish extending to the right.

Colleen Suyama  
Senior Associate

CS:lh

Copy to: Elaine Baker, Department of Environmental Management  
Ali Mehrazarin, A-MEHR

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FEB 17 2015

JESSICA E. WOOLEY  
DIRECTOR

STATE OF HAWAII  
OFFICE OF ENVIRONMENTAL QUALITY CONTROL

Department of Health  
235 South Beretania Street, Suite 702  
Honolulu, Hawaii 96813  
Telephone (808) 586-4185  
Facsimile (808) 586-4186  
Email: oeqchawaii@doh.hawaii.gov

File No.  
OEQC 15-003

February 13, 2015

Munekiyo & Hiraga, Inc.  
Attn: Mich Hirano, AICP, Senior Advisor  
305 High Street, Suite 104  
Wailuku, HI 96793

Dear Mr. Hirano,

SUBJECT: Early Consultation Request for the Proposed Clean-up and Closure of the Makai Hana Landfill, Hana, Maui

The Office of Environmental Quality Control has reviewed the brief information contained in your February 5, 2015 letter about the subject project, and offers the following comments for your consideration.

1. We note that the subject project is located within the State Conservation District, and acknowledge your coordination with the Office of Conservation and Coastal Lands. In the Draft Environmental Assessment (EA) for the project, please indicate that pursuant to Chapter 343 Hawaii Revised Statutes and Section 11-200-6, Hawaii Administrative Rules, the project's use of Conservation District lands is also a trigger for the preparation of the EA.
2. As an Agency Action by the Department of Environmental Management (DEM), please be aware that the proper terminology and flow path for this project is such that the DEM is the "proposing and determination agency" in this case, rather than an "approving agency" as noted in your letter. Accordingly, the proposing agency initiates the EA process, makes the initial determination on the need for an EA, prepares the EA and makes the determination based on the project's Final EA whether to require a full Environmental Impact Statement (EIS) if the impacts may be significant. In the event that the proposing agency makes such a determination, then the County Mayor, as the "accepting authority," would determine the acceptability of the subsequent Final EIS.

Thank you for the opportunity to comment. If there are any questions, please contact Mr. Tom Eisen of my staff at (808) 586-4185 or by electronic mail at [Thomas.Eisen@doh.hawaii.gov](mailto:Thomas.Eisen@doh.hawaii.gov).

Sincerely,

Jessica E. Wooley, Director  
Office of Environmental Quality Control

July 22, 2015

Jessica E. Wooley, Director  
Office of Environmental Quality Control  
Department of Health  
235 South Beretania Street, Suite 702  
Honolulu, Hawaii 96801

SUBJECT: Early Consultation Letter for the Proposed Clean-Up and Closure  
for the Makai Hana Landfill, Hana, Maui (OEQC 15-003)

Dear Ms. Wooley:

Thank you for your letter of February 13, 2015 responding to our request for early consultation in preparation of a Draft Environmental Assessment (EA) for the proposed Makai Hana Landfill project. On behalf of the County of Maui Department of Environmental Management (DEM) we offer the following information, which addresses your comments in the order listed in your letter:

1. We will note that the project's use of Conservation District lands is also a trigger for the preparation of the EA.
2. We will identify the DEM as the "proposing and determination agency" in the EA. Further, the Mayor of the County of Maui has designated DEM as the "accepting authority".

Jessica E. Wooley, Director  
July 22, 2015  
Page 2

Again, thank you for your participation in the Chapter 343, Hawaii Revised Statutes review process. A copy of your letter will be included in the Draft EA. A copy of the Draft EA will be sent to your office for review and comment. In the meantime, if there are any questions or if additional information is needed, please contact me at (808) 244-2015.

Very truly yours,

A handwritten signature in black ink, appearing to read 'Colleen Suyama', with a long horizontal flourish extending to the right.

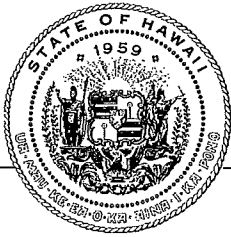
Colleen Suyama  
Senior Associate

CS:lh

Copy to: Elaine Baker, Department of Environmental Management  
Ali Mehrazarin, A-MEHR

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## OFFICE OF PLANNING STATE OF HAWAII

235 South Beretania Street, 6th Floor, Honolulu, Hawaii 96813  
Mailing Address: P.O. Box 2359, Honolulu, Hawaii 96804

DAVID Y. IGE  
GOVERNOR

LEO R. ASUNCION  
ACTING DIRECTOR  
OFFICE OF PLANNING

Telephone: (808) 587-2846  
Fax: (808) 587-2824  
Web: <http://planning.hawaii.gov/>

Ref. No. P-14666

February 27, 2015

Mr. Mich Hirano, AICP  
Senior Advisor  
Munekiyo & Hiraga, Inc.  
305 High Street, Suite 104  
Wailuku, Hawaii 96793

Dear Mr. Hirano:

Subject: Early Consultation Request for the Proposed Clean-Up and Closure of the Makai Hana Landfill, Hana, Maui; TMK: (2)1-3-006:012 (por) and (2)1-3-006:007 (por)

Thank you for the opportunity to provide comments on the early consultation request for the proposed clean-up and closure of the makai section of the Hana Landfill, transmitted to our office by letter dated February 5, 2015. It is our understanding that the Maui County, Department of Environmental Management (DEM) proposes to remove 90,000 cubic yards of waste material from the makai section of the Hana Landfill (Makai Hana Landfill) and transfer the material to a larger area located on the west side of the Waikoloa Road in Hana. The site of the Makai Hana Landfill will be excavated, recyclable and green material will be reused, and the remaining waste will be hauled to the larger site (mauka side) of Waikoloa Road for permanent disposal. The Makai Hana Landfill will then be sealed, decommissioned, graded, and vegetation will be put in place to mitigate soil erosion. Furthermore, DEM is in the process of extending the boundaries of the Hana Landfill to add approximately 45 acres of land to the Makai Hana Landfill site to provide a buffer zone to surrounding lands and resolve encroachment issues.

The Office of Planning (OP) has reviewed the transmitted material and have the following comments to offer:

1. OP provides technical assistance to state and county agencies in administering the statewide planning system in Hawaii Revised Statutes (HRS) Chapter 226, the Hawaii State Plan. The Hawaii State Plan provides goals, objectives, priorities, and priority guidelines for growth, development, and the allocation of resources throughout the State. The Hawaii State Plan includes diverse policies and objectives of state interest including but not limited to the economy, agriculture, the visitor industry, federal expenditure, the physical environment, facility systems, socio-cultural advancement, climate change adaptation, and sustainability.

The Draft Environmental Assessment (Draft EA) should include an analysis on the Hawaii State Plan, HRS Chapter 226, that addresses whether this project conforms or is in conflict with state and county plans, policies, and controls. The analysis should include a discussion on the project's ability to meet the objectives and policies listed in HRS Chapter 226.

2. OP is the lead agency for the Hawaii Coastal Zone Management Program. The coastal zone management area is defined as "all lands of the State and the area extending seaward from the shoreline to the limit of the State's police power and management authority, including the U.S. territorial sea" see HRS § 205A-1 (definition of "coastal zone management area").

The Draft EA should include an analysis of the proposed project's ability to meet the objectives and policies set forth in HRS § 205A-2. This analysis should be included in a section of the Draft EA that examines how this project conforms or is in conflict with state and county plans, policies, and controls. Where a conflict or inconsistency exists, the analysis must describe the extent to which the applicant has reconciled its proposed action with HRS § 205A-2. These objectives and policies include: recreational resources, historic resources, scenic and open space resources, coastal ecosystems, economic uses, coastal hazards, managing development, public participation, beach protection, and marine resources.

3. The Draft EA should provide a complete list of all federal, state, or county permits required for this landfill project. A listing of required permits will allow OP to verify the project's consistency with the plans, programs, and policy objectives that fall under our authority.
4. This landfill project lies within the Special Management Area (SMA) delineated by the County of Maui, Department of Planning. Please consult with said department on the procedures and requirements for addressing SMA regulations.
5. The transmitted material states that once removal of the waste material is removed from the Makai Hana Landfill, the site will be sealed, graded to reflect the original drainage patterns of the area, and vegetation will be placed on top to mitigate against erosion loss. The Draft EA should consider landscaping best management practices (BMP) to control stormwater runoff to nearby estuaries, watersheds, and the nearshore waters of Kainalimu and Hana Bay. Stormwater planting BMP's include: stormwater ponds, infiltration and sand filters, bioretention basins, open channels, and filter strips and buffers. These methods are some of the ways that vegetation and Low Impact Development concepts can be used to prevent stormwater from

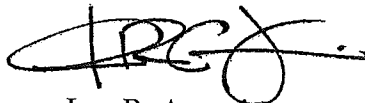
Mr. Mich Hirano, AICP  
February 27, 2015  
Page 3

damaging the area's more fragile ecosystems. These methods are listed in the "Low Impact Development, A Practitioners Guide." Specifically please examine Section 3.6, pgs. 3-67 to 3-74 for further information. This guidance can be viewed or downloaded from the OP website at:  
[http://files.hawaii.gov/dbedt/op/czm/initiative/lid/lid\\_guide\\_2006.pdf](http://files.hawaii.gov/dbedt/op/czm/initiative/lid/lid_guide_2006.pdf)

6. The transmitted material states that the County of Maui is in the process of extending the boundaries surrounding the Hana Landfill site to address encroachment concerns and provide a buffer area to surrounding area near the landfill. This parcel lies within the Agricultural District mauka of Waikoloa Road. The Draft EA should fully address the anticipated impacts of the expanded landfill area, including a detailed description of disposal plans, and conducting studies as needed to address archaeological, biological, environmental and operational impacts, and existing and required permits. This is necessary to avoid any segmentation concerns with the Draft EA.

If you have any questions regarding this comment letter, please contact Josh Hekeka of our office at 587-2845.

Sincerely,

A handwritten signature in black ink, appearing to read 'LR Asuncion', with a stylized flourish at the end.

Leo R. Asuncion  
Acting Director

July 22, 2015

Leo R. Asuncion, Jr. AICP, Acting Director  
Office of Planning  
State of Hawaii  
P.O. Box 2359  
Honolulu, Hawaii 96804

SUBJECT: Early Consultation Letter for the Proposed Clean-Up and Closure  
for the Makai Hana Landfill, Hana, Maui (Ref. No. P-14666)

Dear Mr. Asuncion:

Thank you for your letter of February 27, 2015 responding to our request for early consultation in preparation of a Draft Environmental Assessment (EA) for the proposed Makai Hana Landfill project. On behalf of the County of Maui, Department of Environmental Management (DEM), we offer the following information in the order of your comments listed in your letter:

1. The Draft EA will include a discussion and analysis of the Hawaii State Plan, Hawaii Revised Statutes (HRS) Chapter 226.
2. The Draft EA will include an analysis of the objectives and policies set forth in HRS § 205A-2.
3. The Draft EA will include a list of all federal, state, and county permits required for the project.
4. Coordination has been carried out with the County of Maui, Department of Planning. They have advised that a Special Management Area Assessment will be required for the project.
5. The Draft EA will include Best Management Practices (BMPs), including landscaping and Low Impact Development considerations. The engineering consultant for the project has been advised to review the "Low Impact Development, A Practitioners Guide".

6. The Draft EA will include a description of the encroachment area of the Hana Landfill site. For your information, in coordination with the Department of Land and Natural Resources, a Final Environmental Assessment was processed for the encroachment area. The Final EA was published on November 8, 2007. As appropriate, studies are being prepared and will be included in the Draft EA.

Again, thank you for your participation in the Chapter 343, HRS review process. We appreciate your input and a copy of your letter will be included in the Draft EA. A copy of the Draft EA will be sent to your office for review and comment. In the meantime, if there are any questions or if additional information is needed, please contact me at (808) 244-2015.

Very truly yours,



Colleen Suyama  
Senior Associate

CS:lh

Copy to: Elaine Baker, Department of Environmental Management  
Ali Mehrazarin, A-MEHR

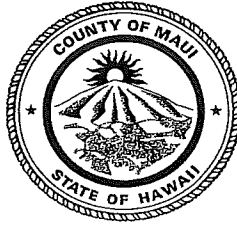
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MAR 25 2015

ALAN M. ARAKAWA  
Mayor

KYLE K. GINOZA, P.E.  
Director

MICHAEL M. MIYAMOTO  
Deputy Director



MICHAEL RATTE  
Solid Waste Division

ERIC NAKAGAWA, P.E.  
Wastewater Reclamation Division

**COUNTY OF MAUI  
DEPARTMENT OF  
ENVIRONMENTAL MANAGEMENT**

2050 MAIN STREET, SUITE 1C  
WAILUKU, MAUI, HAWAII 96793

March 20, 2015

Mr. Mich Hirano  
Munekiyo & Hiraga, Inc.  
305 High Street, Suite 104  
Wailuku, Hawaii 96793

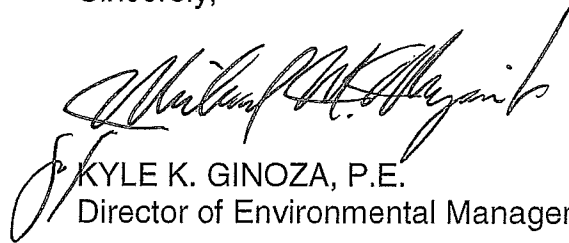
**SUBJECT: MAKAI HANA LANDFILL CLEAN-UP AND CLOSURE  
EARLY CONSULTATION  
TMK (2) 3-1-006:012 AND 007, HANA**

We reviewed the subject application and have the following comments:

1. Solid Waste Division comments:
  - a. None.
2. Wastewater Reclamation Division (WWRD) comments:
  - a. The County does not have a wastewater system in the area of the subject project.

If you have any questions regarding this memorandum, please contact Michael Miyamoto at 270-8230.

Sincerely,



KYLE K. GINOZA, P.E.  
Director of Environmental Management

Michael T. Munekiyo  
PRESIDENT

Karlynn K. Fukuda  
EXECUTIVE VICE PRESIDENT

Mark Alexander Roy  
VICE PRESIDENT

Tessa Munekiyo Ng  
VICE PRESIDENT

Mitsuru "Mich" Hirano  
SENIOR ADVISOR

July 22, 2015

Kyle Ginoza, Director  
Department of Environmental Management  
2050 Main Street, Suite 1C  
Wailuku, Hawaii 96793

SUBJECT: Early Consultation Letter for the Proposed Clean-Up and Closure  
for the Makai Hana Landfill, Hana, Maui

Dear Mr. Ginoza:

Thank you for your letter of March 20, 2015 responding to our request for early consultation in preparation of a Draft Environmental Assessment (EA) for the proposed Makai Hana Landfill project. We appreciate your letter of confirmation that the County does not have a wastewater system in the area.

A copy of your letter will be included in the Draft EA. A copy of the Draft EA will be sent to your office for review and comment. In the meantime, if there are any questions or if additional information is needed, please contact me at 244-2015.

Very truly yours,



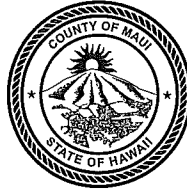
Colleen Suyama  
Senior Associate

CS:lh

Copy to: Elaine Baker, Department of Environmental Management  
Ali Mehrazarin, A-MEHR

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ALAN M. ARAKAWA  
MAYOR



FEB 20 2015  
JEFFREY A. MURRAY  
CHIEF

ROBERT M. SHIMADA  
DEPUTY CHIEF

**COUNTY OF MAUI**  
**DEPARTMENT OF FIRE AND PUBLIC SAFETY**  
**FIRE PREVENTION BUREAU**

313 MANEA PLACE + WAILUKU, HAWAII 96793  
(808) 244-9161 + FAX (808) 244-1363

**Date** : February 18, 2015

**To** : Munekiyo & Hiraga , Inc.  
Attn: Mich Hirano  
305 High Street, Suite 104  
Wailuku, HI 96793

**Subject** : Early Consultation Request for the Proposed Clean-up and  
Closure of the Makai Hana Landfill.  
Hana , Maui , Hawaii  
(2) 1-3-006:012 (por.) & 007

Dear Mich,

Thank you for allowing the Fire Prevention Bureau the opportunity to comment on the above said project. We have no comment at this time. We also have no objections pertaining to this project.

If there are any questions, please feel free to contact me by mail or at 808-244-9161 ext. 25.

Sincerely,

A handwritten signature in black ink that reads "Kono Davis".

Kono Davis  
Lieutenant, Fire Prevention Bureau  
313 Manea Place  
Wailuku, HI 96793





**MUNEKIYO HIRAGA**

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Michael T. Munekiyo  
PRESIDENT

Karlynn K. Fukuda  
EXECUTIVE VICE PRESIDENT

Mark Alexander Roy  
VICE PRESIDENT

Tessa Munekiyo Ng  
VICE PRESIDENT

Mitsuru "Mich" Hirano  
SENIOR ADVISOR

July 22, 2015

Kono Davis, Lieutenant  
Fire Prevention Bureau  
Department of Fire & Public Safety  
County of Maui  
313 Manea Place  
Wailuku, Hawaii 96793

SUBJECT: Early Consultation Letter for the Proposed Clean-Up and Closure  
for the Makai Hana Landfill, Hana, Maui

Dear Lieutenant Davis:

Thank you for your letter of February 18, 2015 responding to our request for early consultation in preparation of a Draft Environmental Assessment (EA) for the proposed Makai Hana Landfill project. On behalf of the County of Maui Department of Environmental Management we appreciate your letter of confirmation that you have no objections to the project.

Again, thank you for your participation in the Chapter 343, Hawaii Revised Statutes review process. A copy of your letter will be included in the Draft EA. A copy of the Draft EA will be sent to your office for review and comment. In the meantime, if there are any questions or if additional information is needed, please contact me at 244-2015.

Very truly yours,

Colleen Suyama  
Senior Associate

CS:lh

Copy to: Elaine Baker, Department of Environmental Management  
Ali Mehrazarin, A-MEHR

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DEPARTMENT OF  
**HOUSING AND HUMAN CONCERNS**  
COUNTY OF MAUI

FEB 13 2015  
ALAN M. ARAKAWA  
Mayor  
JO-ANN T. RIDAO  
Director  
JAN SHISHIDO  
Deputy Director

---

2200 MAIN STREET • SUITE 546 • WAILUKU, HAWAII 96793 • PHONE (808) 270-7805 • FAX (808) 270-7165  
MAILING ADDRESS: 200 SOUTH HIGH STREET • WAILUKU, HAWAII 96793 • EMAIL: director.hhc@mauicounty.gov

February 9, 2015

Mich Hirano, AICP, Senior Advisor  
Munekiyo & Hiraga, Inc.  
305 High Street, Suite 104  
Wailuku, Hawaii 96793

Dear Mr. Hirano:

**SUBJECT: Early Consultation Request for the Proposed Clean-up and  
Closure of the Makai Hana Landfill, Hana, Maui, Hawaii**

The Department has reviewed the request for Early Consultation for the above subject project. Based on this review, the department has no comments to offer regarding the subject.

Sincerely,

JO-ANN T. RIDAO

Director of Housing and Human Concerns

July 22, 2015

Jan Shishido, Deputy Director  
Department of Housing and Human Concerns  
2200 Main Street, Suite 546  
Wailuku, Hawaii 96793

SUBJECT: Early Consultation Letter for the Proposed Clean-Up and Closure  
for the Makai Hana Landfill, Hana, Maui

Dear Ms Shishido:

Thank you for your department's letter of February 9, 2015 responding to our request for early consultation in preparation of a Draft Environmental Assessment (EA) for the proposed Makai Hana Landfill project. On behalf of the County of Maui Department of Environmental Management we appreciate your letter of confirmation that you have no comments to offer.

Again, thank you for your participation in the Chapter 343, Hawaii Revised Statutes review process. A copy of your letter will be included in the Draft EA. A copy of the Draft EA will be sent to your office for review and comment. In the meantime, if there are any questions or if additional information is needed, please contact me at 244-2015.

Very truly yours,



Colleen Suyama  
Senior Associate

CS:lh  
Copy to: Elaine Baker, Department of Environmental Management  
Ali Mehrazarin, A-MEHR

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ALAN M. ARAKAWA  
Mayor



FEB 26 2015

KA'ALA BUENCONSEJO  
Director

BRIANNE L. SAVAGE  
Deputy Director

**DEPARTMENT OF PARKS & RECREATION**

700 Hali'a Nako Street, Unit 2, Wailuku, Hawaii 96793

(808) 270-7230  
FAX (808) 270-7934

February 19, 2015

Mr. Mich Hirano, AICP, Senior Associate  
Munekiyo & Hiraga, Inc.  
305 High Street, Suite 104  
Wailuku, HI 96793

Dear Mr. Hirano:

**SUBJECT: Early Consultation Request for the Proposed Clean-up and Closure  
of the Makai Hana Landfill, Hana, Maui, Hawaii**

Thank you for the opportunity to review and comment on the proposed clean-up and closure of the Makai Hana Landfill. The Department has no comment at this time, but would like to review the project as it develops. In accordance with the requirements of Chapter 343, Hawaii Revised Statutes (HRS) and Section 11-2-00-6, Hawaii Administrative Rules (HAR) please provide a copy of the Draft Environmental Assessment (EA).

Feel free to contact me or Robert Halvorson, Chief of Planning and Development, at 270-7931, should you have any questions.

Sincerely,

A handwritten signature in black ink, appearing to read "Ka'ala Buenconsejo", is written over a horizontal line.

KA'ALA BUENCONSEJO  
Director of Parks and Recreation

c: Robert Halvorson, Chief of Planning and Development

KB:RH:do

July 22, 2015

Ka'ala Buenconsejo, Director  
Department of Parks and Recreation  
County of Maui  
700 Halia Nakoa Street, Unit 2  
Wailuku, Hawaii 96793

SUBJECT: Early Consultation Letter for the Proposed Clean-Up and Closure  
for the Makai Hana Landfill, Hana, Maui

Dear Mr. Buenconsejo:

Thank you for your letter of February 19, 2015 responding to our request for early consultation in preparation of a Draft Environmental Assessment (EA) for the proposed Makai Hana Landfill project. On behalf of the County of Maui Department of Environmental Management we appreciate your letter of confirmation that you have no comments at this time.

Again, thank you for your participation in the Chapter 343, Hawaii Revised Statutes review process. A copy of your letter will be included in the Draft EA. A copy of the Draft EA will be sent to your office for review and comment. In the meantime, if there are any questions or if additional information is needed, please contact me at 244-2015.

Very truly yours,



Colleen Suyama  
Senior Associate

CS:lh

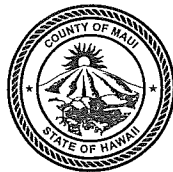
Copy to: Elaine Baker, Department of Environmental Management  
Ali Mehrazarin, A-MEHR

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ALAN M. ARAKAWA  
Mayor

WILLIAM R. SPENCE  
Director

MICHELE CHOUTEAU McLEAN  
Deputy Director



MAR 03 2015

COUNTY OF MAUI  
**DEPARTMENT OF PLANNING**

March 2, 2015

Mr. Mark Alexander Roy, Vice-President  
Munekiyo & Hiraga, Inc.  
305 High Street, Suite 104  
Wailuku, Hawaii 96793

Dear Mr. Roy:

**SUBJECT: EARLY CONSULTATION REQUEST FOR THE PROPOSED  
CLEAN-UP AND CLOSURE OF THE MAKAI HANA LANDFILL, HANA,  
MAUI, HAWAII; TMK: (2) 1-3-006:012 (RFC 2015/0014)**

The Department of Planning (Department) is in receipt of your request as noted above. The Department has the following comments on the subject matter:

1. The makai dumpsite (Parcel 12) fill is being moved to an existing mauka landfill site known as "Parcel 7." Will this be a permanent move or will the fill have to be relocated again in the future?
2. The proposed action will require a Special Management Area Assessment.
3. FYI: The landfill is operating under the following existing permits – all will expire on February 28, 2018: (SUP1 2007/0002, CUP 2007/0001, & SM1 2007/0001).
4. The Department would appreciate the opportunity to review the Draft Environmental Assessment when it is available.

Thank you for the opportunity to comment on this matter. If additional clarification is required, please contact Staff Planner Paul Fasi at [paul.fasi@mauicounty.gov](mailto:paul.fasi@mauicounty.gov) or by phone at (808) 270-7814.

Sincerely,

A handwritten signature in black ink, appearing to read "Clayton I. Yoshida".

CLAYTON I. YOSHIDA, AICP  
Planning Program Administrator

for WILLIAM SPENCE  
Planning Director

Mr. Mark Alexander Roy, Vice-President  
March 2, 2015  
Page 2

xc: John S. Rapacz, Planning Program Administrator (PDF)  
Paul F. Fasi, Staff Planner (PDF)  
Development Services Administration  
Project File  
General File

WRS:CIY:PFF:nt

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July 22, 2015

William Spence, Director  
Department of Planning  
County of Maui  
2200 Main Street, Suite 315  
Wailuku, Hawaii 96793

SUBJECT: Early Consultation Letter for the Proposed Clean-Up and Closure  
for the Makai Hana Landfill, Hana, Maui

Dear Mr. Spence:

Thank you for your letter of March 2, 2015 responding to our request for early consultation in preparation of a Draft Environmental Assessment (EA) for the proposed Makai Hana Landfill project. On behalf of the County of Maui, Department of Environmental Management (DEM), we offer the following information in the order of your comments listed in your letter:

1. The Makai Hana Landfill clean up and removal action is a permanent move and will not require further relocation in the future.
2. Upon completion of the EA, a Special Management Area Assessment application will be filed with the Department of Planning. As such, the Draft EA will include a list of all federal, state, and county permits required for the project.
3. The County of Maui, DEM confirms that time extensions for the landfill's existing permits will be filed prior to the February 28, 2018 expiration date.
4. The Draft EA will be transmitted to the Department of Planning for review and comment.



William Spence, Director  
July 22, 2015  
Page 2

Again, thank you for your participation in the Chapter 343, Hawaii Revised Statutes review process. We appreciate your input and a copy of your letter will be included in the Draft EA. A copy of the Draft EA will be sent to your office for review and comment. In the meantime, if there are any questions or if additional information is needed, please contact me at 244-2015.

Very truly yours,

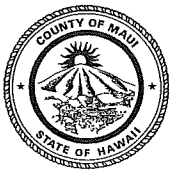
A handwritten signature in black ink, appearing to read 'Colleen Suyama', with a long horizontal flourish extending to the right.

Colleen Suyama  
Senior Associate

CS:lh

Copy to: Elaine Baker, Department of Environmental Management  
Ali Mehrazarin, A-MEHR

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ALAN M. ARAKAWA  
MAYOR

OUR REFERENCE  
YOUR REFERENCE

# POLICE DEPARTMENT

## COUNTY OF MAUI

55 MAHALANI STREET  
WAILUKU, HAWAII 96793  
(808) 244-6400  
FAX (808) 244-6411

FEB 26 2015



TIVOLI S. FAAUMU  
CHIEF OF POLICE

DEAN M. RICKARD  
DEPUTY CHIEF OF POLICE

February 20, 2015

Mr. Mark Alexander Roy, AICP  
Vice President  
Munekiyo & Hiraga, Inc.  
305 High Street, Suite 104  
Wailuku, HI 96793

Dear Mr. Roy:

SUBJECT: Early Consultation Request for the Proposed Clean-up and Closure of  
the Makai Hana Landfill

Thank you for your letter of February 5, 2015, requesting comments on the above  
subject.

We have reviewed the information submitted and have no comments or  
recommendations to make at this time. Thank you for giving us the opportunity to  
comment on this project.

Very truly yours,

Acting Assistant Chief Clarence Kenui  
for: Tivoli S. Faaumu  
Chief of Police

c: William Spence, Planning Department

July 22, 2015

Chief Tivoli S. Faaumu  
Police Department  
County of Maui  
55 Mahalani Street  
Wailuku, Hawaii 96793

SUBJECT: Early Consultation Letter for the Proposed Clean-Up and Closure  
for the Makai Hana Landfill, Hana, Maui

Dear Chief Faaumu:

Thank you for your letter of February 20, 2015 responding to our request for early consultation in preparation of a Draft Environmental Assessment (EA) for the proposed Makai Hana Landfill project. On behalf of the County of Maui Department of Environmental Management we appreciate your letter of confirmation that you have no comments at this time.

Again, thank you for your participation in the Chapter 343, Hawaii Revised Statutes review process. A copy of your letter will be included in the Draft EA. A copy of the Draft EA will be sent to your office for review and comment. In the meantime, if there are any questions or if additional information is needed, please contact me at 244-2015.

Very truly yours,



Colleen Suyama  
Senior Associate

CS:lh  
Copy to: Elaine Baker, Department of Environmental Management  
Ali Mehrazarin, A-MEHR

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MAR 12 2015

ALAN M. ARAKAWA  
Mayor

DAVID C. GOODE  
Director

ROWENA M. DAGDAG-ANDAYA  
Deputy Director

Telephone: (808) 270-7845  
Fax: (808) 270-7955



COUNTY OF MAUI  
**DEPARTMENT OF PUBLIC WORKS**

200 SOUTH HIGH STREET, ROOM NO. 434  
WAILUKU, MAUI, HAWAII 96793

GLEN A. UENO, P.E., P.L.S.  
Development Services Administration

CARY YAMASHITA, P.E.  
Engineering Division

BRIAN HASHIRO, P.E.  
Highways Division

March 5, 2015

MUNEKIYO HIRAGA  
305 High Street, Suite 104  
Wailuku, Maui, Hawaii 96793

ATTENTION: Mich Hirano, AICP, Senior Advisor

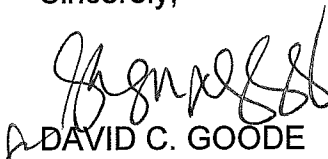
Dear Mr. Hirano:

**SUBJECT: EARLY CONSULTATION REQUEST FOR THE  
PROPOSED CLEAN-UP AND CLOSURE OF THE MAKAI  
HANA LANDFILL, HANA, MAUI, HAWAII**

We reviewed your early consultation request and have no comments at this time.

Please call Rowena M. Dagdag-Andaya at 270-7845 if you have any questions regarding this letter.

Sincerely,

  
DAVID C. GOODE  
Director of Public Works

DCG:RMDA:da  
xc: Highways Division  
Engineering Division  
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Michael T. Munekiyo  
PRESIDENT

Karlynn K. Fukuda  
EXECUTIVE VICE PRESIDENT

Mark Alexander Roy  
VICE PRESIDENT

Tessa Munekiyo Ng  
VICE PRESIDENT

Mitsuru "Mich" Hirano  
SENIOR ADVISOR

July 22, 2015

David C. Goode, Director  
Department of Public Works  
County of Maui  
200 S. High Street, Room No. 434  
Wailuku, Hawaii 96793

SUBJECT: Early Consultation Letter for the Proposed Clean-Up and Closure  
for the Makai Hana Landfill, Hana, Maui

Dear Mr. Goode:

Thank you for your letter of March 5, 2015 responding to our request for early consultation in preparation of a Draft Environmental Assessment (EA) for the proposed Makai Hana Landfill project. On behalf of the County of Maui Department of Environmental Management we appreciate your letter of confirmation that you have no comments at this time.

Again, thank you for your participation in the Chapter 343, Hawaii Revised Statutes review process. A copy of your letter will be included in the Draft EA. A copy of the Draft EA will be sent to your office for review and comment. In the meantime, if there are any questions or if additional information is needed, please contact me at 244-2015.

Very truly yours,



Colleen Suyama  
Senior Associate

CS:lh

Copy to: Elaine Baker, Department of Environmental Management  
Ali Mehrazarin, A-MEHR

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ALAN M. ARAKAWA  
Mayor



FEB 20 2015

DAVID TAYLOR, P.E.  
Director

PAUL J. MEYER  
Deputy Director

**DEPARTMENT OF WATER SUPPLY**

**COUNTY OF MAUI**

200 SOUTH HIGH STREET  
WAILUKU, MAUI, HAWAII 96793-2155  
[www.mauiwater.org](http://www.mauiwater.org)

February 11, 2015

Munekiyo & Hiraga, Inc.  
Attn: Mich Hirano, AICP, Senior Advisor  
305 High Street, Suite 104  
Wailuku, Hawaii 96793

Dear Mr. Hirano:

RE: Early Consultation Request for the Proposed Clean-up and Closure of the  
Makai Hana Landfill, Hana, Maui, Hawaii

Thank you for the opportunity to provide the following comments on the  
referenced project.

The project will not negatively impact the Department of Water Supply's East  
Maui Water System.

Sincerely,

A handwritten signature in black ink, appearing to read "Dave Taylor".

Dave Taylor, P.E., Director  
ayi

c: DWS Engineering Division  
DWS Water Resources & Planning Division files

*"By Water All Things Find Life"*



Michael T. Munekiyo  
PRESIDENT

Karlynn K. Fukuda  
EXECUTIVE VICE PRESIDENT

Mark Alexander Roy  
VICE PRESIDENT

Tessa Munekiyo Ng  
VICE PRESIDENT

Mitsuru "Mich" Hirano  
SENIOR ADVISOR

July 22, 2015

Dave Taylor, P.E., Director  
Department of Water Supply  
County of Maui  
200 South High Street  
Wailuku, Hawaii 96793

SUBJECT: Early Consultation Letter for the Proposed Clean-Up and Closure  
for the Makai Hana Landfill, Hana, Maui

Dear Mr. Taylor:

Thank you for your letter of February 11, 2015 responding to our request for early consultation in preparation of a Draft Environmental Assessment (EA) for the proposed Makai Hana Landfill project. On behalf of the County of Maui Department of Environmental Management, we appreciate your confirmation that the project will not negatively impact the Department of Water Supply's East Maui Water System.

Again, thank you for your participation in the Chapter 343, Hawaii Revised Statutes review process. A copy of your letter will be included in the Draft EA. A copy of the Draft EA will be sent to your office for review and comment. In the meantime, if there are any questions or if additional information is needed, please contact me at 244-2015.

Very truly yours,



Colleen Suyama  
Senior Associate

CS:lh

Copy to: Elaine Baker, Department of Environmental Management  
Ali Mehrazarin, A-MEHR

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## **X. REFERENCES**



## **X. REFERENCES**

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County of Maui, Department of Public Works and Waste Management, Application for Special Management Area Permit Kaholopo Bridge Replacement, August 2001.

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U.S. National Park Service Western Region Natural Resources and Research Division Hawaii Cooperative Park Service Unit, Hawaii Stream Assessment – A Preliminary Appraisal of Hawaii's Stream Resources Report R84, Prepared for the State of Hawaii Department of Land and Natural Resources Commission on Water Resource Management, December 1990.

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Wilson Okamoto & Associates, Inc., Final Preservation Plan for County of Maui Bridges Within the Hana Highway Historic District, prepared for County of Maui, Department of Public Works and Waste Management, December 2001.

# **APPENDIX A.**

## **1984 Executive Order**

EXECUTIVE ORDER NO. 3-04

## Setting Aside Land for Public Purposes

By this Executive Order, I, the undersigned, Governor of the State of Hawaii, by virtue of the authority in me vested by Section 171-11, Hawaii Revised Statutes, and every other authority me hereunto enabling, do hereby order that the public land hereinafter described be, and the same is, hereby set aside for the following public purposes:

FOR HANA GARBAGE DUMP SITE, to be under the control and management of the County of Maui, a body corporate and politic of the State of Hawaii, being all of the lands situate at Kawaipapa, Hana, Maui, Hawaii, containing an area of 29.0 acres, more or less, TOGETHER WITH an easement for "roadway purposes", containing an area of 1.735 acres, more or less, all more particularly described in Exhibit "A" and delineated on Exhibit "B", both of which are attached hereto and made parts hereof, said exhibits being, respectively, a survey description and survey map prepared by the Survey Division, Department of Accounting and General Services, State of Hawaii, both being designated C.S.F. No. 20,247 and dated August 21, 1985.

SUBJECT to the disapproval by the Legislature by two-thirds vote of either the Senate or the House of Representatives or by majority vote of both, in any regular or special session next following the date of this Executive Order.

In Witness Whereof, I have hereunto set my hand and caused the Great Seal of the State of Hawaii to be affixed.  
Done at the Capitol at Honolulu this 16<sup>th</sup> day of November, Nineteen Hundred and 85.

*George Ariyoshi*  
Governor of the State of Hawaii

Approved as to form:

*Chinn P. Watson*  
Deputy Attorney General

Dated: August 30, 1985



STATE OF HAWAII

SURVEY DIVISION

DEPT. OF ACCOUNTING AND GENERAL SERVICES  
HONOLULU

C.S.F. No. 20,247

August 12, 1985

HANA GARBAGE DUMP SITE

Kawaipapa, Hana, Maui, Hawaii

Being portion of the Government Land of Kawaipapa.

Beginning at the west corner of this parcel of land, the coordinates of said point of beginning referred to Government Survey Triangulation Station "KAUIKI" being 5091.44 feet North and 2823.13 feet West, thence running by azimuths measured clockwise from True South:-

1. 240° 03' 1512.55 feet along Lot A-1-A of the Government Land of Kawaipapa to a point 250.00 feet west from highwater mark at seashore;
2. Thence along the remainder of the Government Land of Kawaipapa, 250.00 west and parallel to highwater mark at seashore, the direct azimuth and distance being:  
343° 14' 970.13 feet;
3. 33° 30' 287.00 feet along Grant 8237 to Haiku Fruit and Packing Company;
4. 47° 10' 170.00 feet along Grant 8237 to Haiku Fruit and Packing Company;
5. 77° 40' 545.00 feet along Grant 8237 to Haiku Fruit and Packing Company;
6. 129° 46' 30" 1008.28 feet along Lot A-1-A of the Government Land of Kawaipapa to the point of beginning and containing an AREA OF 29.0 ACRES, MORE OR LESS.

Together with a Road Easement as shown on plan attached hereto and made a part hereof and more particularly described as follows:-

C.S.P. No. 20,247

August 12, 1985

Being a portion of Lot A-1-A of the Government Land of Kawaipapa.

Beginning at the northwest corner of this easement and on the easterly side of Hana Highway, the coordinates of said point of beginning referred to Government Survey Triangulation Station "KAUIKI" being 5709.82 feet North and 5471.35 feet West, thence running by azimuths measured clockwise from True South:-

1. 251° 36' 135.67 feet along Grant 12,987 to Yoshimi Uchiyama and Agnes Kaiwi Uchiyama;
2. 269° 54' 260.30 feet along the remainder of Lot A-1-A of the Government Land of Kawaipapa;
3. 248° 21' 254.01 feet along the remainder of Lot A-1-A of the Government Land of Kawaipapa;
4. 272° 32' 209.21 feet along the remainder of Lot A-1-A and along Lot A-1-B of the Government Land of Kawaipapa;
5. 237° 52' 256.52 feet along Lot A-1-B of the Government Land of Kawaipapa;
6. 252° 45' 294.75 feet along Lot A-1-B of the Government Land of Kawaipapa;
7. 278° 37' 167.37 feet along Lot A-1-B of the Government Land of Kawaipapa;
8. 315° 05' 330.16 feet along Lots A-1-B and A-2 of the Government Land of Kawaipapa;
9. 336° 14' 147.71 feet along Lot A-2 of the Government Land of Kawaipapa;
10. Thence along Lot A-2 of the Government Land of Kawaipapa on a curve to the left with a radius of 125.00 feet, the chord azimuth and distance being:  
296° 54' 158.46 feet;
11. 257° 34' 190.16 feet along Lot A-2 of the Government Land of Kawaipapa;
12. 289° 09' 255.82 feet along Lot A-2 of the Government Land of Kawaipapa;

G.S.P. No. 20,247

August 12, 1985

13. 297° 10' 440.86 feet along Lot A-2 and the remainder of Lot A-1-A of the Government Land of Kawaipapa;
14. 271° 50' 329.39 feet along the remainder of Lot A-1-A of the Government Land of Kawaipapa;
15. 60° 03' 37.97 feet along Hana Garbage Dump Site;
16. 91° 50' 301.61 feet along the remainder of Lot A-1-A of the Government Land of Kawaipapa;
17. 117° 10' 443.96 feet along the remainder of Lot A-1-A of the Government Land of Kawaipapa;
18. 109° 09' 248.76 feet along the remainder of Lot A-1-A of the Government Land of Kawaipapa;
19. 77° 34' 184.50 feet along the remainder of Lot A-1-A of the Government Land of Kawaipapa;
20. Thence along the remainder of Lot A-1-A of the Government Land of Kawaipapa on a curve to the right with a radius of 145.00 feet, the chord azimuth and distance being:  
116° 54' 183.81 feet;
21. 156° 14' 143.97 feet along the remainder of Lot A-1-A of the Government Land of Kawaipapa;
22. 135° 05' 101.46 feet along the remainder of Lot A-1-A of the Government Land of Kawaipapa;
23. 25° 39' 4.24 feet along the remainder of Lot A-1-A of the Government Land of Kawaipapa;
24. 135° 05' 218.47 feet along the remainder of Lot A-1-A of the Government Land of Kawaipapa;
25. 98° 37' 153.95 feet along the remainder of Lot A-1-A of the Government Land of Kawaipapa;
26. 72° 45' 286.10 feet along the remainder of Lot A-1-A of the Government Land of Kawaipapa;

C.S.F. No. 20,247

August 12, 1985

27. 57° 52' 260.88 feet along the remainder of Lot A-1-A of the Government Land of Kawaipapa;
28. 92° 32' 211.56 feet along the remainder of Lot A-1-A of the Government Land of Kawaipapa;
29. 68° 21' 253.44 feet along the remainder of Lot A-1-A of the Government Land of Kawaipapa;
30. 89° 54' 261.00 feet along the remainder of Lot A-1-A of the Government Land of Kawaipapa and along Residence Site for County Physician, Governor's Executive Order 309;
31. 71° 36' 130.59 feet along Residence Site for County Physician, Governor's Executive Order 309;
32. Thence along the easterly side of Hana Highway on a curve to the right with a radius of 2824.79 feet, the chord azimuth and distance being:  
158° 43' 07" 24.02 feet  
to the point of beginning and  
containing an AREA OF 1.735  
ACRES.

SURVEY DIVISION  
DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES  
STATE OF HAWAII

By: Stanley T. Hasegawa  
Stanley T. Hasegawa  
Land Surveyor

pt

Compiled from map furn. by  
County of Maui, CSF 17,643,  
20,177 and other Govt.  
Survey Records.





## **APPENDIX A-1.**

**Board of Land and Natural  
Resources Letter Dated  
May 13, 2011**

STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
Land Division  
Honolulu, Hawaii 96813

May 13, 2011

Board of Land and Natural Resources  
State of Hawaii  
Honolulu, Hawaii

PSF No.:03MD-380

MAUI

Withdrawal from General Lease No. S-4524 of approximately 45.14 acres; Set Aside to County of Maui, Department of Environmental Management for Landfill Expansion Purposes; and Authorize Issuance of a Right-of-Entry to the County of Maui, Department of Environmental Management; Kawaipapa, Hana, Maui, Tax Map Key: (2) 1-3-006:007 portion.

APPLICANT:

County of Maui, Department of Environmental Management

General Lease No. S-4524, Ethel Abreu and Lloyd Abreu

LEGAL REFERENCE:

Section 171-11, Hawaii Revised Statutes (HRS), as amended.

LOCATION:

Portion of Government lands situated at Kawaipapa, Hana, Maui, identified by Tax Map Key: (2) 1-3-006:007 por., as shown on the attached map labeled Exhibit A.

AREA:

45.14 acres, more or less.

ZONING:

State Land Use District:	Agriculture
County of Maui, CZO:	Agriculture

APPROVED BY THE BOARD OF  
LAND AND NATURAL RESOURCES  
AT ITS MEETING HELD ON

May 13, 2011      *tbl*

TRUST LAND STATUS:

Section 5(b) lands of the Hawaii Admission Act

DHHL 30% entitlement lands pursuant to the Hawaii State Constitution: YES \_\_\_\_ NO  
  X  

CURRENT USE STATUS:

The subject lands are encumbered by GL S-4524 for pasture purposes.

PURPOSE:

Landfill expansion purposes

CHAPTER 343 - ENVIRONMENTAL ASSESSMENT:

The Final Environmental Assessment for the subject project was published in the OEQC's Environmental Notice on November 23, 2007 with a finding of no significant impact (FONSI).

APPLICANT REQUIREMENTS:

Applicant shall be required to:

- 1) Process and obtain a 3-lot subdivision at Applicant's own cost;
- 2) Provide survey maps and descriptions according to State DAGS standards and at Applicant's own cost for each of the three (3) lots created.

REMARKS:

Hana landfill is situate at TMK (2) 1-3-006:012, in Hana, Maui and was originally disposed of in 1985 by the State to the County of Maui via Executive Order No. 3304 consisting of 29 acres (more or less).

The County of Maui Department of Environmental Management (DEM) has requested to expand the Hana landfill by about 45 acres (more or less) to accommodate increased demand for operational space that includes an existing encroachment area and additional lands needed for environmental monitoring and buffer zone purposes.

An Environmental Assessment was completed for the subject project and was published in the OEQC's Environmental Notice on November 23, 2007 with a finding of no significant impact (FONSI). According to the County of Maui, a State Special Land Use, County

Special Use and Special Management Area permits have already been acquired for the proposed uses.

In order to enable the expansion and set-aside of government lands, parcel 007 will need to be subdivided. Three (3) parcels are to be created by the County. 1) for the Hana landfill expansion area, 2) for the existing tenant under GL S-4524 and 3) an unused portion of the existing pasture lease on the Hana town side of the existing County road that bisects parcel 007 is to be made available.

General Lease No. S-4524, Ethel Abreu and Lloyd Abreu have no objections to the withdrawal of 45.14 acres. The lease allows for a withdrawal without compensation.


RECOMMENDATION:

That the Board, subject to Applicant fulfilling the Applicant Requirements above:

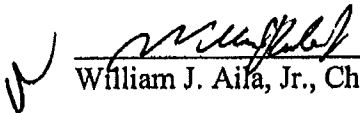
1. Authorize the withdrawal from General Lease No. S-4524 of approximately 45.14 acres.
2. Authorize the County of Maui to conduct the subdivision of government lands into three lots.
3. Approve of and recommend to the Governor the issuance of an executive order setting aside the subject lands to the County of Maui under the terms and conditions cited above, which are by this reference incorporated herein and subject further to the following:
  - A. The standard terms and conditions of the most current executive order form, as may be amended from time to time;
  - B. Disapproval by the Legislature by two-thirds vote of either the House of Representatives or the Senate or by a majority vote by both in any regular or special session next following the date of the setting aside;
  - C. Review and approval by the Department of the Attorney General; and
  - D. Such other terms and conditions as may be prescribed by the Chairperson to best serve the interests of the State.
4. Authorize the issuance of an immediate right-of-entry permit to the County of Maui, Department of Environmental Management covering the subject area under the terms and conditions cited above, which are by this reference incorporated herein and further subject to the following:

- A. The standard terms and conditions of the most current right-of-entry permit form, as may be amended from time to time;
- B. Such other terms and conditions as may be prescribed by the Chairperson to best serve the interests of the State.

Respectfully Submitted,

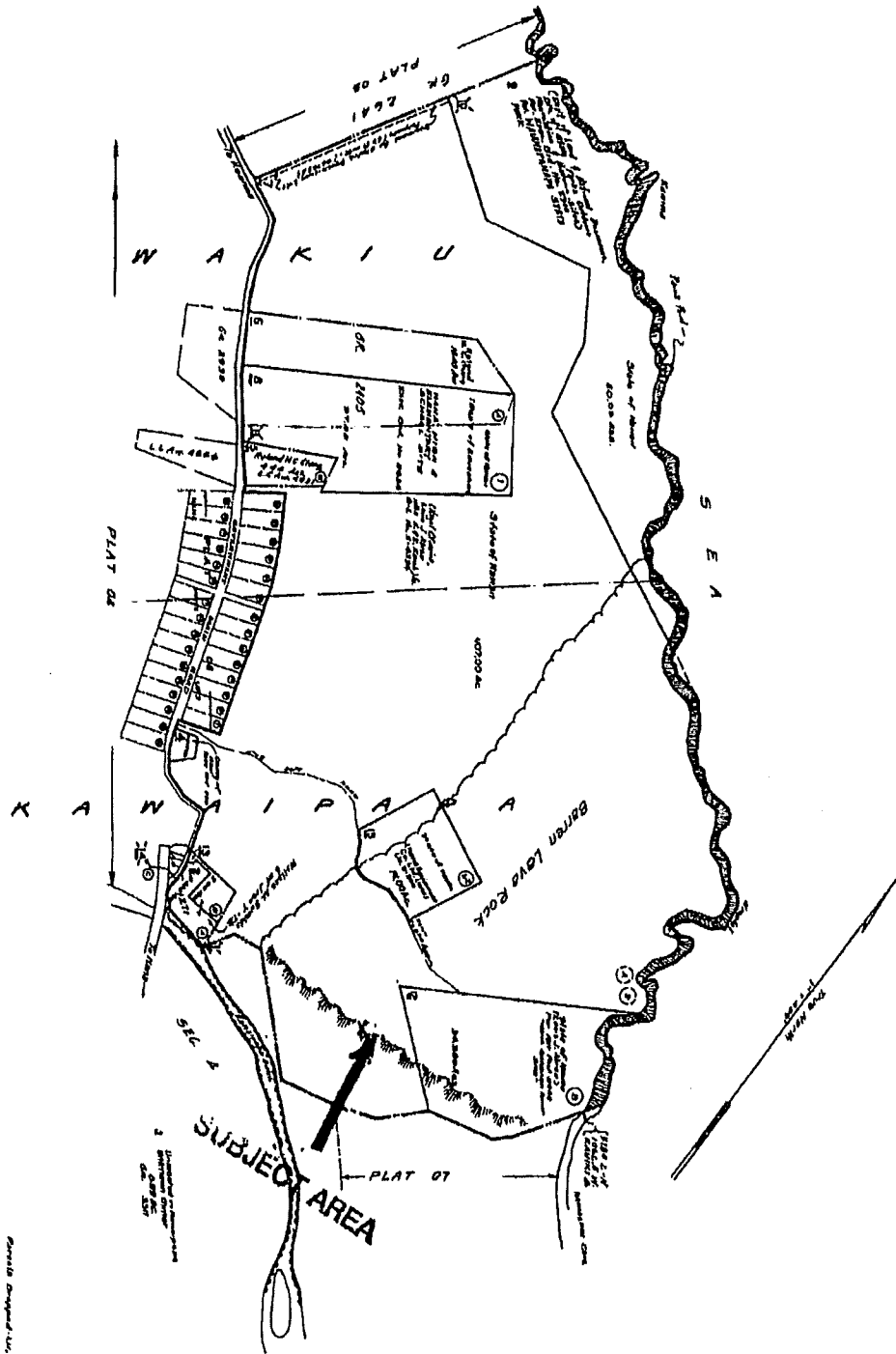
  
\_\_\_\_\_  
Daniel Ornellas  
District Land Agent

APPROVED FOR SUBMITTAL:

  
\_\_\_\_\_  
William J. Aifa, Jr., Chairperson

Orig. No. 3202  
 Source: G.S.C. 8388, Survey Dept. & Top. Map Bureau  
 By: L.H. & H.H. July 1937

Re: MAKU & KAWIPAPA, HAWAII.



MAKUPAPA, HAWAII  
 U.S. GEOLOGICAL SURVEY

Original Drawing No. 3202

SECOND DIVISION	
ZONE SEC. NAT.	
CONTINUED	
1 3 06	
3. SCALE 1:50,000	

**EXHIBIT A**

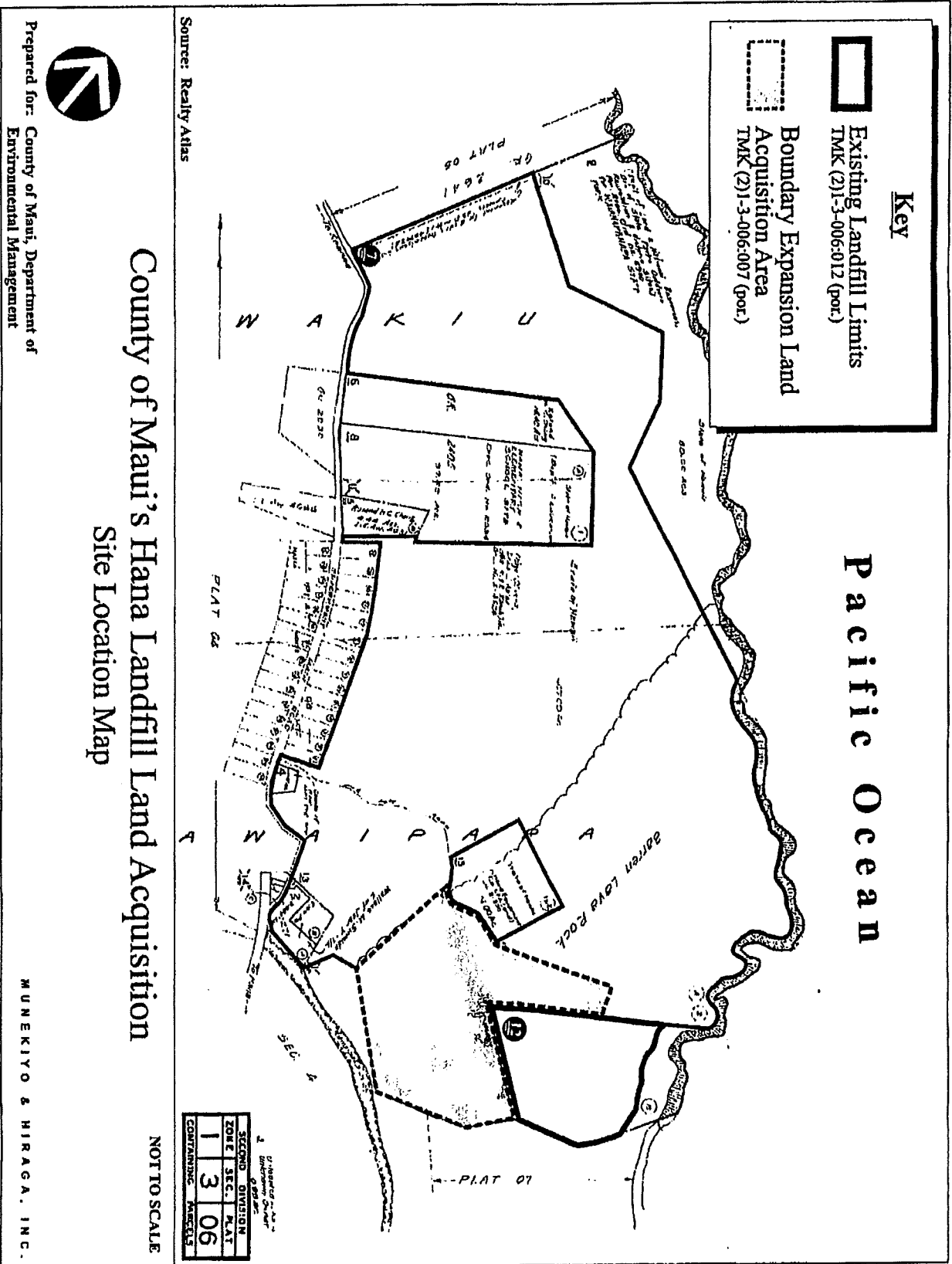


EXHIBIT "A"



C

impound the same and to occupy and use so much of the demised premises as may be required in the exercise of this right, reserved; provided, however, that as a condition precedent to the exercise by the Lessor of the rights reserved in this paragraph just compensation shall be paid to the Lessee for any of Lessee's improvements taken.

2. Withdrawal. The right to withdraw the demised land, or any portion thereof, at any time during the term of this lease upon the giving of reasonable notice by the Board and without compensation, except as provided herein, for public uses or purposes, including residential, commercial, industrial or resort developments, for constructing new roads or extensions, or changes in line or grade of existing roads, for rights-of-way and easements of all kinds, and shall be subject to the right of the Board to remove soil, rock or gravel as may be necessary for the construction of roads and rights-of-way within or without the demised premises; provided, that upon such withdrawal, or upon such taking which causes any portion of the land originally demised to become unusable for the specific use or uses for which it was demised, the rent shall be reduced in proportion to the value of the land withdrawn or made unusable, and if any permanent improvement constructed upon the land by the Lessee is destroyed or made unusable in the process of such withdrawal or taking, the proportionate value thereof shall be paid based upon the unexpired term of the lease; provided, further, that no such withdrawal or taking shall be had as to those portions of the land which are then under cultivation with crops until the crops are harvested, unless the Board pays to the Lessee the value of such crops.

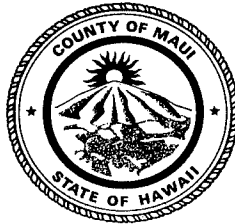
EXHIBIT "C"

## **APPENDIX B.**

# **Final Closure Plan Hana Landfill Makai Side**

# **FINAL CLOSURE PLAN HANA LANDFILL MAKAI SIDE**

**Prepared for**



**COUNTY OF MAUI  
DEPARTMENT OF  
ENVIRONMENTAL MANAGEMENT**  
2050 MAIN STREET, SUITE 1C  
WAILUKU, MAUI, HAWAII 96793

**Prepared by**

**A-MEHR, INC.  
23016 Mill Creek Drive  
Laguna Hills, CA 92653**

**November 2014  
Revised February 2015**

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## FIGURES

Figure 1	Existing Site Plan
Figure 2	Field Investigation Test Points and Limits of Waste
Figure 3	Waste Excavation Contours
Figure 4	Proposed Clean Closure Excavation Grades

## APPENDIX A Soil Sampling and Analysis Plan

# **FINAL CLOSURE PLAN HANA LANDFILL MAKAI SIDE**

## **1. INTRODUCTION**

Hana Landfill is comprised of two sections. The currently active Hana Landfill area lies entirely on the west side (mauka side) of Waikoloa Road. The original permitted dump area, Hana Landfill Makai Side, which has not been used for a number of years, is located on the east (makai) side of Waikoloa Road, in an area designated as part of a Conservation District regulated by the State Department of Land Use and Natural Resources (DLNR). Figure 1 is a site plan showing the existing conditions of the two landfill areas.

Waste disposed in the Hana Landfill Makai Side included municipal solid waste, green waste, construction and demolition waste and scrap metal including old automobiles. After disposal activities were discontinued most waste was covered with soil, although some areas of green waste were left without cover and allowed to decompose. Over time, most of the area where waste was disposed became covered with natural vegetation ranging from grass to heavy brush.

After consideration of several options, the County of Maui has determined that the most appropriate means of closing the Hana Landfill Makai Side area is by clean closure, including removal of all waste materials, grading of the area and revegetation with appropriate erosion controls.

In order to define the limits, characteristics and quantity of waste in the makai area, the County conducted a detailed site investigation in March 2014 according to plans developed by A-Mehr, Inc. (A-Mehr). A contractor working at the direction of an A-Mehr field engineer excavated a series of test pits and trenches, which were subsequently surveyed by a licensed land surveyor to establish the waste limits. A-Mehr then combined the survey data and depth of waste in each test pit to calculate an estimated waste volume.

The remainder of this document contains the following sections:

- Section 2 describes in detail the March 2014 investigative program and results of its analysis.
- Section 3 describes the proposed clean closure process.
- Section 4 addresses post-closure maintenance and use.

## **2. INVESTIGATIVE PROGRAM AND RESULTS**

### **2.1 Methodology**

The field investigation was conducted during the period March 24-March 26, 2014. Prior to this time, a licensed surveyor (Akamai Surveying, Inc.) staked the locations of test pits according to an investigative plan prepared by A-Mehr based on prior information from county records of waste disposal. The County's contractor, under A-Mehr's field engineer's direction, then excavated at the preset locations using two general approaches:

- For test pit locations intended to define limits of waste, an initial excavation determined whether waste was present. If waste was found, the test pit was extended by trenching outward toward the site boundary until no waste was present. This point was staked for later surveying to define the waste limits in the area.
- If no waste was found in the initial test pit, the pit was extended by trenching or by excavating additional pits in locations toward the landfill center, until the interface between waste and native soil or clean fill soil was established. This point was staked for later surveying to define the waste limits in the area.
- For test pits intended to determine the depth and characteristics of waste, pits were excavated as deep as needed to reach the interface between the bottom of waste and native soil. Excavation depths ranged from 5 feet to 28 feet in these pits. Data collected for each pit included the depth of cover soil, and depth to bottom of waste.

Additional test pits in addition to the pre-surveyed test pit locations were excavated as needed to refine the limits of waste or depth and characteristics of waste in some areas. All test pits were backfilled after being staked by the A-Mehr engineer. Akamai Surveying then established the location and elevation of the surface at each test pit location.

Figure 2 shows the locations of all the test pits together with the limits of waste established by the fieldwork. Table 1 is the field engineer's record of observations.

## 2.2 Investigation Results

### 2.2.1 Waste Limits and Volume

Following receipt of final post-investigation survey information from Akamai Surveying, A-Mehr created Figure 2, showing all test points and the approximate limits of waste based on the field log data. Digital terrain model (DTM) surfaces were prepared of the top and bottom of waste using information in Table 1 and the contouring routines in the earthwork software (TerraModel, by Trimble). Figure 3 shows the conceptual contours of the bottom of waste determined by this method.

The area contained within the limits of waste shown in Figure 2 is approximately 6.4 acres. For closing the landfill area by removing all waste, the area within the waste limits would be excavated to the grades shown in Figure 4. The approximate depth of excavation required to accomplish this is shown by the contours of Figure 3.

Computations comparing the DTM surfaces for existing topography, top of waste and bottom of waste, result in the following approximate volumes of waste and soil that would be excavated during clean closure of the site:

Total excavation (existing topography to bottom of waste):	99,500 cy
Clean soil excavation (existing topography to top of waste):	10,300 cy
Waste excavation (top of waste to bottom of waste)	89,200 cy

It should be emphasized that these quantities are approximate. Significant uncertainty is created particularly in the area identified in Figure 3, where the field investigation exposed a

previously unidentified large number of abandoned automobiles and other vehicles that were apparently dumped into a gully many years ago. There is no accurate information on the previous elevations of this area, and it was not possible to excavate through the vehicles to find the "bottom of waste" in the area.

#### 2.2.2 Waste Limits in Relation to Permitted Site Boundary

As discussed in Section 1, historical surveys and anecdotal information has suggested that some waste in the Hana Landfill Makai Side area may have encroached into areas of the State Land Use Conservation District that were outside the boundaries permitted by the original landfill permits. The field investigation and its results described in Section 2.2.1 indicate that such encroachment, if any, involves a very limited area.

The areas of potential encroachment discussed in the past were beyond the east and north boundaries of the Hana Landfill Makai Side area. Each of these is discussed below.

- **East Boundary:** The easterly boundary of the Hana Landfill Makai Side, as originally granted in Executive Order (E.O.) 3304 dated November 16, 1985, was defined as a meandering line "250.00 feet west and parallel to high water mark at seashore", referring to the shoreline of Ka'inālimu Bay. Figure 2 shows the 250-foot setback and the waste limits as determined in the field investigation. The drawing indicates that a small area in the southwest part of the site encroaches beyond the site boundary by approximately 30 feet.
- **North Boundary:** Figure 2 shows the north site boundary in relation to the test pits used to determine the extent of waste in the area. Test pits near the boundary include P-4, NP-4, and P-5. Point P-4, the originally staked position, was located approximately 60 feet outside the site boundary based on previous County estimates of encroachment into the Conservation District. Excavation at that location found no waste. Additional test pits and trenching established the waste limits at Point NP-4, located within a few feet of the site boundary. Similarly, no waste was found at P-5, and trenching located waste approximately five feet inward from it.

Based on the data and field observations, it is reasonable to conclude that any encroachment of waste into the Conservation District that is outside the boundaries granted by E.O. 3304 for waste disposal is, at most, a very small area. The proposed clean closure project will include location of waste limits around the entire site perimeter. After completion of excavation, the limits adjacent to the site boundary will be surveyed to identify any areas of encroachment beyond the originally permitted landfill boundaries. In consultation with the State Department of Land and Natural Resources (DLNR), such areas, if any, will be restored to conditions acceptable to the DLNR.

### 3. CLEAN CLOSURE PROCEDURE

The County proposes to close the Hana Landfill Makai Side area by removing all waste over a period of approximately 3 years, using County resources and personnel or contractors. Closure of the approximately 6.4-acre waste footprint would occur in staged increments of approximately two acres per year, beginning along the north boundary and working toward the south.

Clean closure could be done using the following procedures:

- Survey and stake the limits of waste as shown in Figure 2.
- Clear and grub vegetation from an area planned for waste removal during the next 3 to 6 months. (In order to minimize erosion the disturbed area should be limited.)
- Strip existing cover soil to expose refuse, and stockpile the soil for any fill required subsequently for grading purposes, with any excess made available for use as daily cover in the active Hana Landfill.
- Excavate refuse to expose clean native soil, and haul to a process area or the active landfill.
- If significant refuse is found at the surveyed limits of waste, expand the excavated area until all refuse has been removed.
- Process the refuse as follows:
  - Remove large metal items to a scrap metal stockpile for transport to an appropriate licensed scrap dealer.
  - Remove abandoned automobiles buried in gullies at the southeast corner of the site. As they are removed, additional excavation will be conducted to ensure that all vehicles are removed and that the area is excavated to the approximate original grades.
  - Remove any large wood items including stumps or logs to a separate stockpile. Depending on the character and quantity of these materials they may either be processed or disposed in the active Hana Landfill.
  - Depending on conditions, remove other items or materials that can be readily separated for recycling. This may include concentrated volumes of clean green waste.
  - Transfer the remaining refuse to the active Hana landfill for disposal.
- After all refuse has been excavated from an area, soil samples will be collected from the exposed subgrade, and tested to determine compliance with DOH Environmental Action Levels (EALs). In addition, samples will be collected from native soils in areas hydrogeologically upgradient from the landfill, to determine background levels of any chemical constituents detected in subgrade soil within the landfill footprint. Any areas where subgrade levels with soil constituents exceeding EALs and background concentrations will be further excavated to expose bedrock or soils that test within background concentrations. Appendix A provides additional detail regarding soil sampling and testing program.
- No area of exposed subgrade will be backfilled, covered with soil or revegetated until testing has demonstrated soil contaminant levels are below EAL values.



- Survey the disturbed area and prepare an as-built drawing of the excavated conditions, including any encroachment beyond permitted site boundaries.
- Grade the site to achieve a relatively uniform slope, using stockpiled cover soil as needed to fill any low spots that would collect runoff.
- Install erosion controls and plant the site to an appropriate grass mixture.

Any encroachment of the final excavation grades beyond the originally permitted site boundaries will be documented and reported to the State Department of Land Use and Natural Resources (DLNR). Remedial measures in addition to the procedures described above may be required by DLNR in areas of encroachment.

#### **4. POST-CLOSURE USE AND CARE**

Because the Hana Landfill Makai Side area is within a State Conservation District, it will remain as open space after all waste is removed. Based on past experience at the site, it is expected that over time a variety of plant species will naturally replace the temporary grass cover that the County will install for erosion control. Until that occurs the County will monitor the site and repair any areas where the grass cover is lost in order to prevent erosion.

**TABLE 1 - FIELD INVESTIGATION LOG**

<b>POINT NO.</b>	<b>DEPTH TO WASTE COVER</b>	<b>DEPTH TO BOTTOM OF WASTE</b>	<b>WASTE THICKNESS</b>	<b>DEPTH TO BOTTOM</b>	<b>WASTE APPEARANCE/ COMMENT</b>
P-1	0	0	0	6	NO TRASH
P-2	0	0	0	0	NO TRASH
NPWBD2&D6 aka D-2A	0	0	0	5	NO TRASH
P-3	0	0	0	0	NO TRASH
P-4	0	0	0	5	NO TRASH
NP-4	0	0	0	0	NO TRASH/EDGE OF WASTE
NP-4T	1	7	6	7	TIRE, CAR PARTS, SHACK
P-5	0	0	0	6	NO TRASH
NPSBD5&D6 aka D-5A	0	0	0	5	NO TRASH
P-6	0	0	0	4	NO TRASH
NP-6	0	0	0	5	NO TRASH
P-7	1	7	6	7	TRASH IS RIGHT AT EDGE
P-7T	1	4	3	5	FIRE HYDRANT, 55 GALLON BUCKET
P-8	0	0	0	5	NO TRASH
P-9	1	10	9	NA	CAR ENGINE, AXLE, CAR'S PART
NP-9	0	0	0	5	EDGE OF TRASH
NP-9A	0	0	0	5	EDGE OF TRASH
NP-9B	0	0	0	5	TOE OF TRASH
NP-9C	1	3	2	3	EDGE OF TRASH
NP9-D	0	0	0	5	EDGE OF TRASH
NP-9E	0	0	0	5	EDGE OF TRASH
NP-9F	0	0	0	3	NO WASTE
P-10	3	5	2	5	TIRE WITH RIM, EDGE OF TRASH

<b>P-10A</b>	2	20	18	20	PLASTIC, WOOD, CARPET, CAN, PIPE, PVC PIPE CAR'S BATTERY
<b>P-11</b>	0	0	0	0	NO TRASH
<b>NP-11</b>	0	0	0	0	EDGE OF TRASH
<b>NP-11T</b>	2	5	3	5	WOOD, METAL, WIRE, BLOWER,
<b>P-12</b>	0	0	0	5	NO TRASH
<b>P-13</b>	0	0	0	4	NO TRASH
<b>P-14</b>	0	0	0	4	NO TRASH
<b>D-1</b>	0	0	0	0	NO TRASH
<b>D-2</b>	1	3	2	5	METAL, WOOD, SURFACE TRASH
<b>D-3</b>	1	8	7	8	WOOD, METAL, SHIP'S ROPE, CAR'S PART, GAS ROPE TANK
<b>NDBD3&amp;D4 aka D-3A</b>	1	6	5	10	PLASTIC, WOOD, METAL, CONCRETE
<b>D-4</b>	2	15	13	15	TARP, WOOD, 5 GALLON BUCKET, METAL
<b>D-5</b>	0	0	0	0	NO TRASH
<b>D-6</b>	1	3	2	5	METAL, CARPET, PLASTIC, WOOD
<b>D-7</b>	1	7	6	7	WOOD, CONCRETE, CARPET
<b>NDBD7&amp;D8 aka D-7A</b>	1	9	8	14	WOOD, PIPE, GREEN WASTE, PVC PIPE, BIKE TIRE, MATTERS, CAR'S PART
<b>D-8</b>	2	28	26	28	WOOD, PVC PIPE, ELECTRONIC EQUIPMENT, LUMBER, METAL, CARPET
<b>D-9</b>	0	0	0	8	NO TRASH
<b>D-10</b>	1	7	6	8	CARPET, TIRE
<b>D-10A</b>	0	0	0	0	NO TRASH
<b>D-11</b>	2	6	4	7	REBAR
<b>D-12</b>	1	14	13	20	PVC PIPE, WOOD, CAR'S RIM, GLASS, METAL, CAR'S ROTOR

**APPENDIX A  
HANA LANDFILL MAKAI SIDE FINAL CLOSURE PLAN  
SOIL SAMPLING AND ANALYSIS PLAN  
FEBRUARY 2015**

## **5. INTRODUCTION**

The Hana Landfill Makai side is to be closed by excavation of all waste materials. The exposed underlying natural soil material will be sampled and tested to determine that it does not exceed regulatory limits for contaminants. This Plan describes procedures for sampling, testing and evaluation of test results. It also addresses procedures to be followed in event that unacceptable levels of chemical constituents are present.

The excavation will be conducted in a series of phases over a three-year period, based on weather conditions and availability of labor and equipment. The procedures described in this Plan will be implemented in each phase prior to any final grading or revegetation.

## **6. SOIL SAMPLING PROCEDURES**

Prior to sampling any phase of subgrade within the waste footprint, a minimum of two (2) samples of native soil will be collected from areas outside the landfill waste footprint. These samples will be collected in areas determined to be hydrogeologically upgradient from the landfill. They will be used to establish background levels for potential soil contaminants in the site vicinity.

At the conclusion of each phase of excavation, soil samples will be collected from a depth of approximately six (6) inches below the subgrade surface. Samples will be collected in a container specified by the certified testing laboratory that will analyze them.

A minimum of one sample will be collected from each phase with an area of one acre or less. Samples in phases of one acre or more will be collected on the basis of two (2) samples per acre. Samples will not be taken in areas where waste excavation has exposed bedrock.

The individual responsible for collecting soil samples shall use a Chain of Custody form supplied by the laboratory for transmittal of the samples.

## **7. LABORATORY ANALYSIS**

Each soil sample will be analyzed for the following:

- Total metals using the USEPA method 6010B;
- Mercury by USEPA Method 8015B;
- Total petroleum hydrocarbons (TPH) quantified as diesel, quantified as gasoline, and TPH quantified as oil/residuals by USEPA Method 9015B Modified; and
- Select general soil parameters not subject to EALs.

Analysis results will be compared with applicable Environmental Action Levels (EALs) as established by the Hawaii Department of Health and listed in Attachment 1.

## **8. EVALUATION OF TEST RESULTS**

Each sample result will be compared with EAL values and values from background samples. Areas where one or more parameters exceed both EALs and background concentrations will be identified for additional excavation or investigation.

## **9. REMEDIAL ACTIONS**

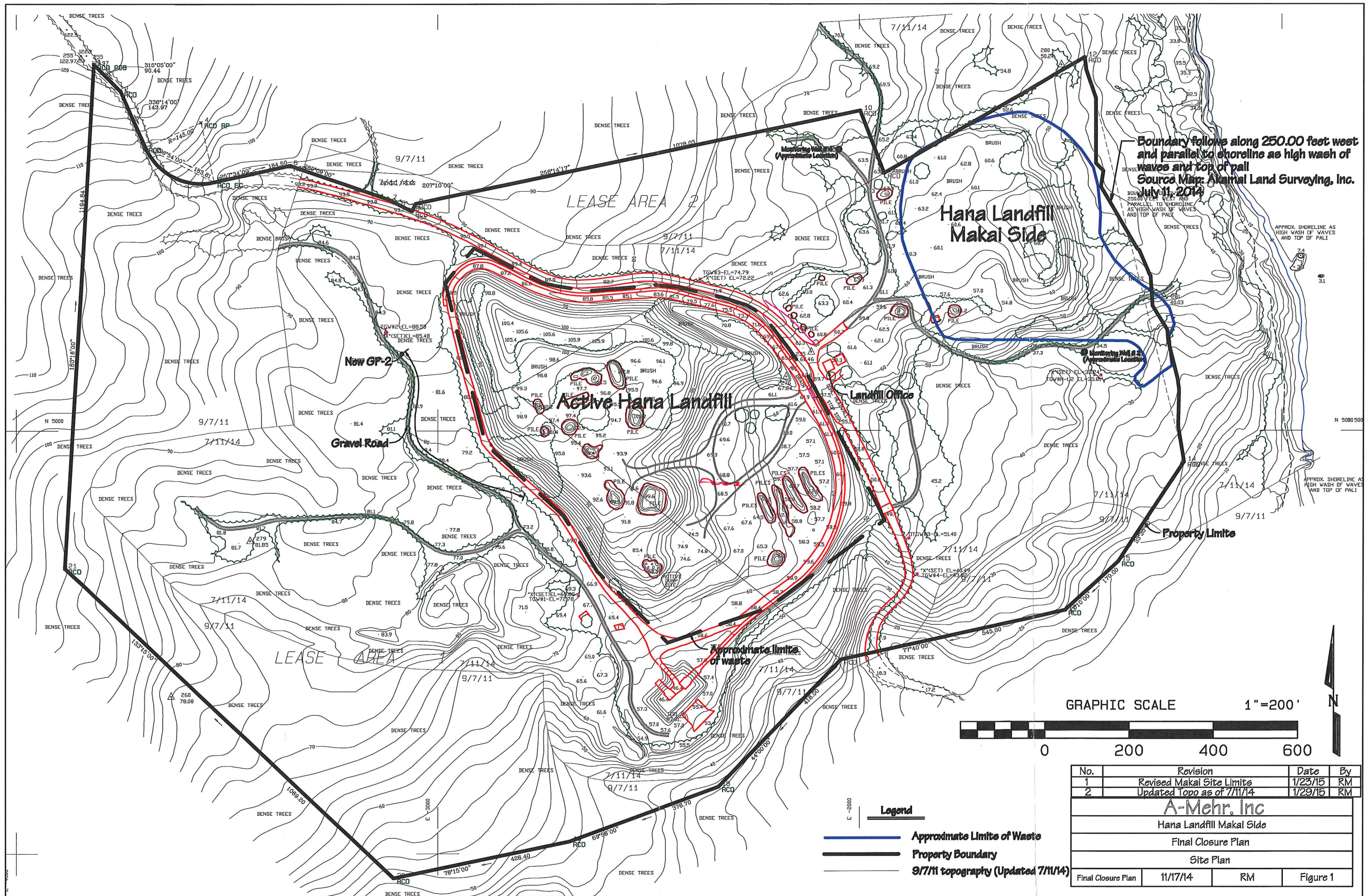
Any area identified for additional excavation or investigation based on soil test results will be additionally excavated, with the excavated material treated as contaminated soil and disposed in accordance with applicable regulations. Following the additional excavation, soil samples will be collected and analyzed in accordance with this Plan.

No excavated area of the landfill will be graded, covered or revegetated until the test program has demonstrated that any contaminated soil has been removed.

**ATTACHMENT 1**  
**SOIL ENVIRONMENTAL ACTION LEVELS**

<b>Analyte</b>	<b>Soil EAL (mg/kg)</b>
Arsenic	2.0E+01
Barium	7.5E+03
Beryllium	4.0E+00
Cadmium	1.1E+01
Chromium	5.0E+02
Cobalt	4.0E+01
Copper	2.3E+02
Lead	2.0E+02
Mercury	4.7E+00
Nickel	1.5E+02
Phosphorus	N/A
Vanadium	1.1E+02
Zinc	2.2E+01
Aluminum	N/A
Calcium	N/A
Iron	N/A
Magnesium	N/A
Manganese	N/A
Potassium	N/A
Sodium	N/A
Strontium	N/A
TPH as Diesel	1.0E+02
TPH as Gasoline	1.0E+02
TPH as Residual Fuel	5.0E+02

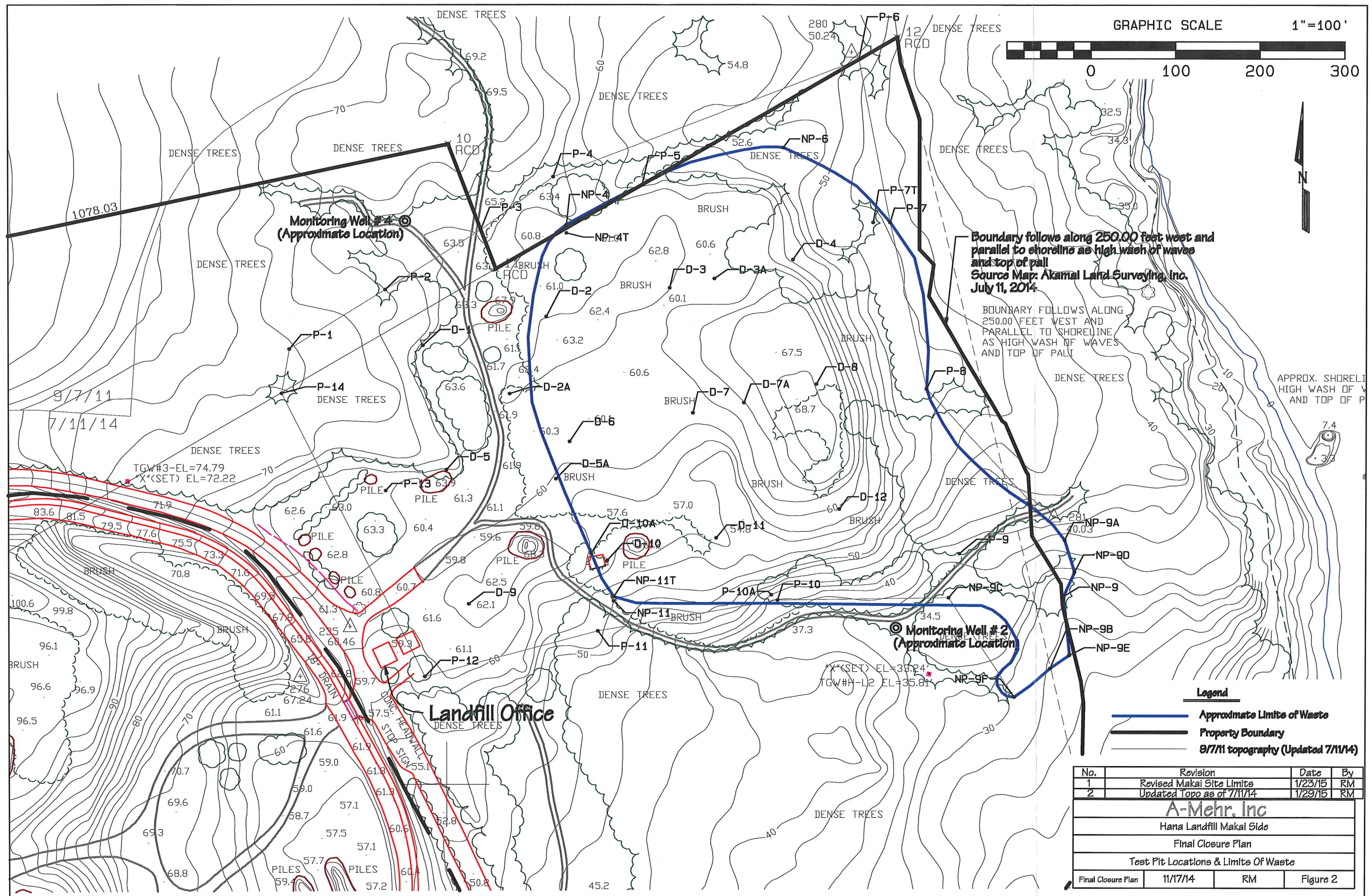




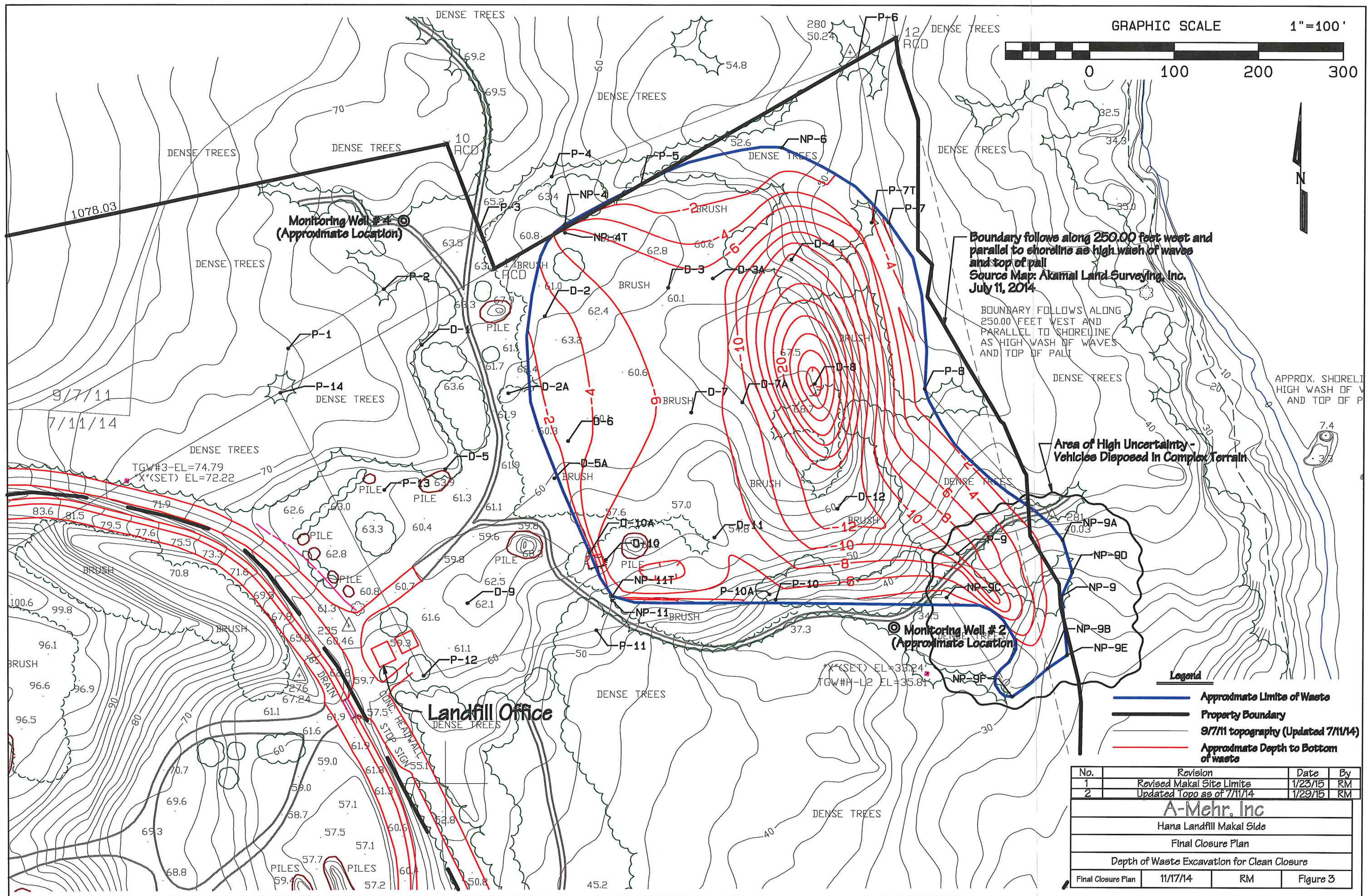
No.	Revision	Date	By
1	Revised Makai Site Limits	1/23/15	RM
2	Updated Topo as of 7/11/14	1/29/15	RM

A-Mehr, Inc			
Hana Landfill Makai Side			
Final Closure Plan			
Site Plan			
Final Closure Plan	11/17/14	RM	Figure 1

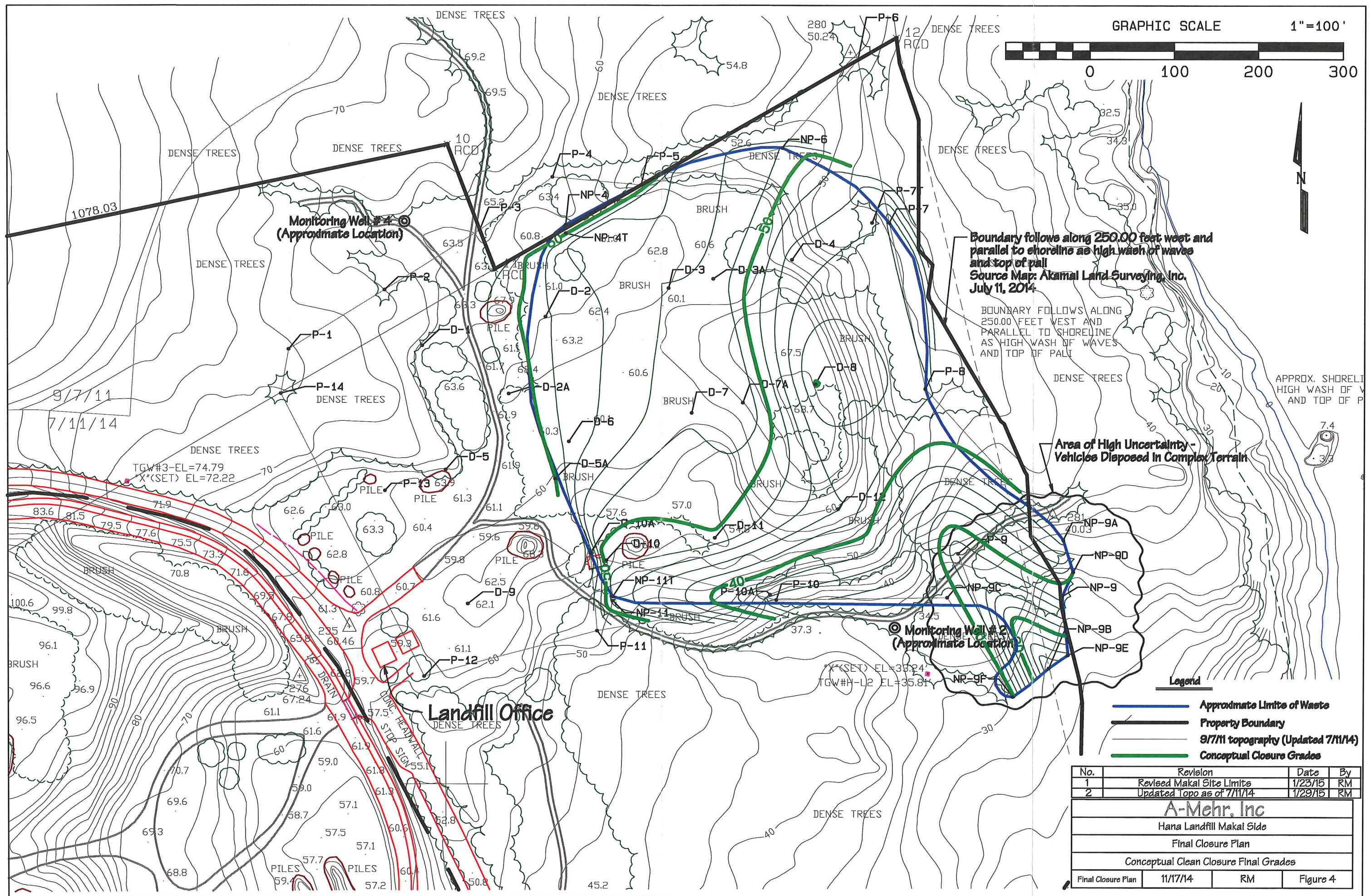














# **APPENDIX C.**

## **Archaeological Assessment Report (2003)**

**AN ARCHAEOLOGICAL ASSESSMENT OF PORTIONS  
OF THE HANA LANDFILL AND ADJACENT STATE  
LAND IN KAWAIPAPA *AHUPUA`A*,  
HANA DISTRICT, ISLAND OF MAUI  
(TMK: 1-3-06: Parcel 12 and Portion of Parcel 7)**

**Prepared on behalf of:**

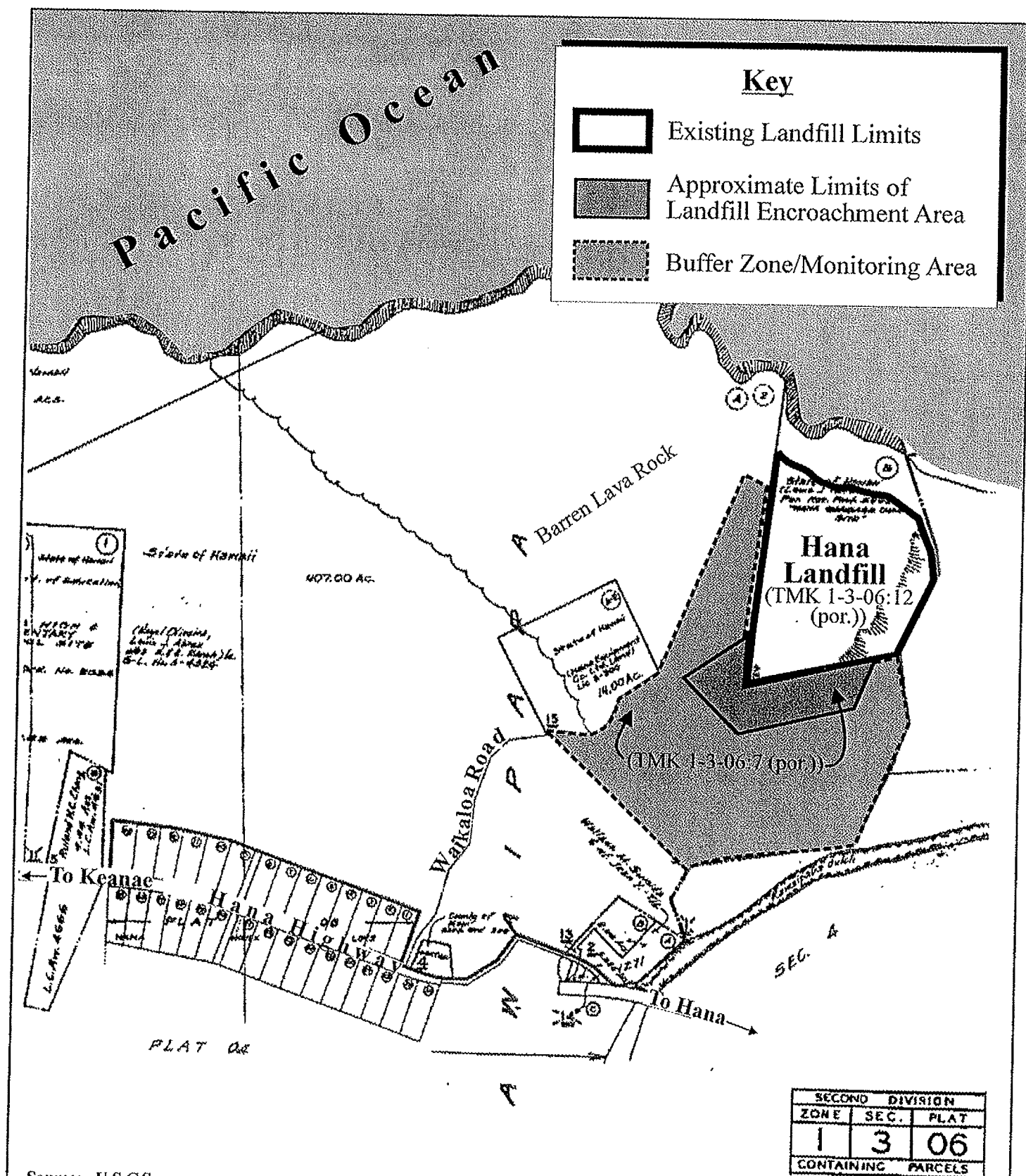
**The Department of Public Works &  
Environmental Management  
County of Maui**

**Prepared by:**

**Xamanek Researches  
Pukalani, Maui  
Erik M. Fredericksen**

**22 September 2003**





Source: U.S.G.S.

Figure 2

# County of Maui's Hana Landfill Land Acquisition Site Location Map

NOT TO SCALE



Prepared for: County of Maui, Department of Public Works  
and Environmental Management

MUNEKIYO & HIRAGA, INC.

COMDPWHanaLFsitelocation

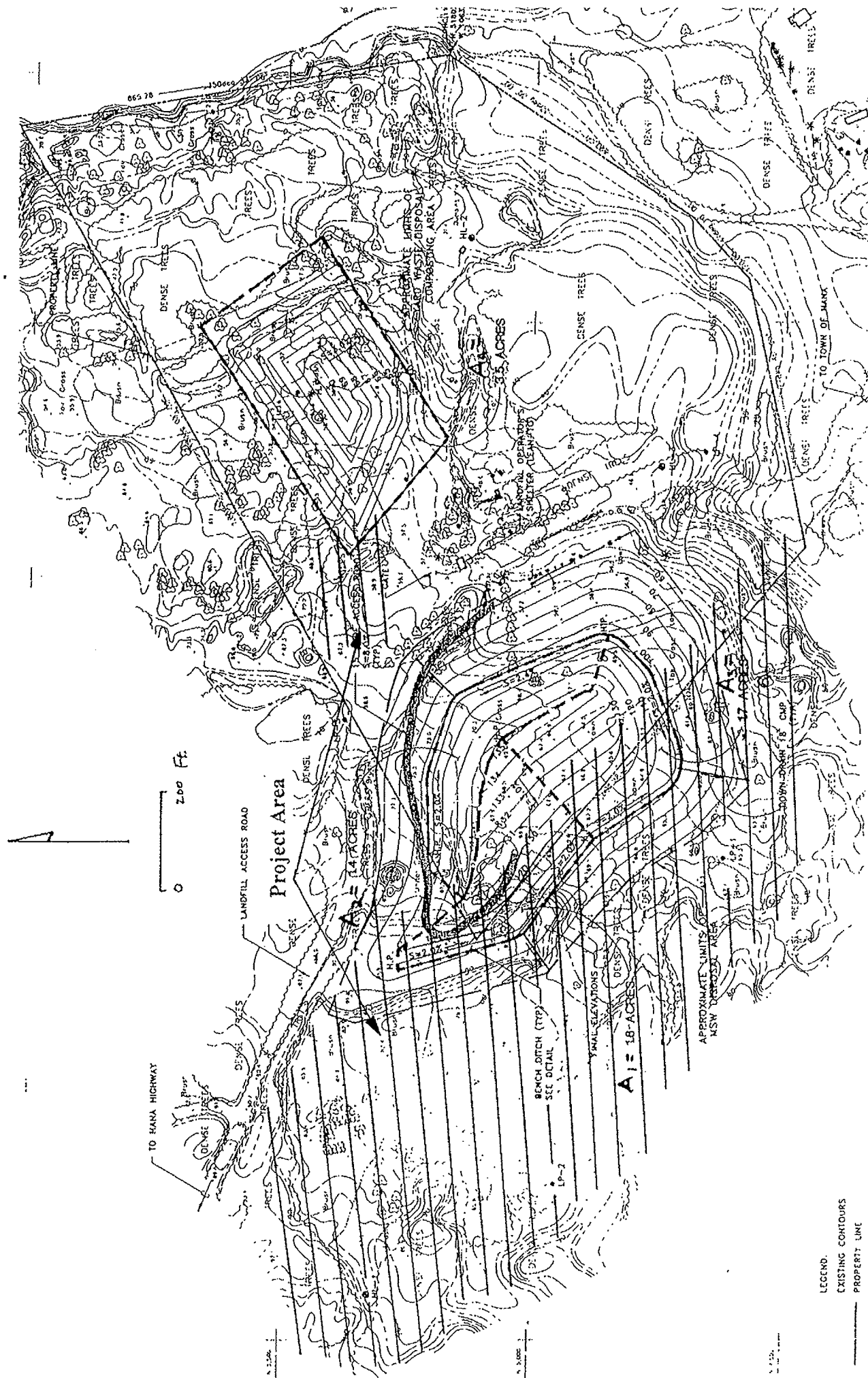


Figure 3—Plan of the surveyed project area, Hana Landfill.

## INTRODUCTION

Mr. Michael Munekiyo of Munekiyo & Hiraga, Inc. contacted Xamanek Researches about a project at the Hana Landfill in January 2003. At this time, it was not known what level of work was necessary for the study parcel (Figures 1, 2 and 3). Proposed study areas included an encroachment on the southeastern side of the existing landfill that extended on to State land (TMK 1-3-006: Portion of Parcel 7) and the proposed white goods and car storage area (Figures 2 and 3). We contacted Dr. Melissa Kirkendall of the State Historic Preservation Division (SHPD), in order to discuss the appropriate level of study for the proposed project area. It was subsequently determined that an archaeological assessment would likely be sufficient, because the general area had been impacted by previous grading activities associated with landfill operations. We were asked to submit a proposal for the necessary work, and subsequently awarded the contract to carry out an archaeological assessment for the above noted areas.

The Hana Landfill facility is located in Kawaipapa *Ahupua`a*, Hana District, Island of Maui (TMK: 1-3-006: Parcel 12 and Portion of Parcel 7) [Figures 1 and 2; Photos 1-4]. As previously mentioned above, the study area is currently utilized as a landfill. The following report presents the results of our archaeological assessment for the study area.

## THE STUDY AREA

Erik Fredericksen visited the project area on 24 July 2003 and met with Mr. James Perry of the Solid Waste Division of the County of Maui. In addition, Mr. Andrew Park, heavy equipment operator at the landfill, was very helpful and familiarized the author with the facility and the location of two gas monitoring wells (LP-1 and LP-2) and one water quality monitoring well (HL-1). These stations lie along the southeastern side of the existing facility, and are used to monitor potential negative impacts to the water table and the surrounding area.

The bulk of the fieldwork for this archaeological assessment was conducted on 26 July 2003. It is estimated that the study area ranges from c. 55 feet to 90 feet AMSL.



The project area is composed of relatively level *a'a* land, the bulk of which has been bulldozed and/or grubbed.

The study area essentially lies on an *a'a* flow that contains generally thin soil cover. Undisturbed portions of land adjacent to the project area and some previously cleared sections to the south of the study area are generally heavily vegetated. However, grubbing and grading actions associated with County landfill operations appear to have impacted the entire assessment project area. The bulk of the plants observed in the vicinity of the survey area consisted of non-native species, including grasses and annual weeds near the ground surface, with ironwood (*Casuarina equisetifolia*) trees dominating the overstory where trees are present. However, isolated *kukui* (*Aleurites moluccana*) and *hala* (*Pandanus tectorius*) trees were noted in some areas as well. In addition, several varieties of landscaping plants—including avocado and Monkeypod (*Albizia saman*) trees—were noted in the vicinity of the maintenance workers' utility area that is near gas monitoring well LP-1.

It was evident at the time of the surface inspection that the study area had been previously disturbed. During our walkover, scattered modern materials were observed on the existing surface. In addition, abandoned vehicles were noted in the vicinity of the LP-1 monitoring well. Finally, recently imported cinder fill material was noted on much of the property. This imported material is utilized on a daily basis to cover refuse in the landfill facility.

The Hana Landfill property (Parcel 12) borders the ocean on the northwestern side and State land essentially bounds the County property elsewhere. State Parcel 7 lies *mauka* (east) of the landfill parcel. A County road—Waikalua Road—crosses the landfill property in a northeast/southwest manner. It is estimated that this portion of Maui receives between 100 and 120 inches of annual precipitation.

## BACKGROUND INFORMATION

### Previous Archaeology in the general area

As a whole, there has been relatively little archaeological investigation in the culturally rich Hana region. There has been no previously documented archaeological work carried out on the County of Maui Hana Landfill parcel or the adjacent State parcel. The nearest known sites consist of Kaulelepo Heiau (SIHP 50-50-13-110), Kauleiula Heiau (Site 109), Waikoloa Platform (Site 107), and Kaianalimu habitation site (Site 1491). In addition, a post-contact cemetery lies well south of the landfill project area on the southern side of Kawaipapa Gulch.

The closest archaeological investigation was carried out in 1984 on a c. 14-acre parcel of land (Landrum, 1984). There were no significant precontact cultural resources located during this reconnaissance level investigation.

The nearest archaeological inventory survey in the *ahupua`a* of Kawaipapa was carried out on a parcel that lies nearly 1 km to the southeast (*mauka*) of the landfill study area. This inventory survey was conducted by PHRI in 1993 for the Hana Medical Center parcel (Henry and Graves, 1993). This study located four sites—two complexes (Site 3150 and Site 3153), and two boundary walls (Site 3151 and Site 3152). Sites 3150 and 3153 were interpreted as temporary habitation areas that appeared to have been utilized periodically, possibly during the plantation era. All sites were interpreted as post-contact features.

The next closest inventory survey was conducted for the Hana Fire Station complex in 1993 by Xamanek Researches. This parcel of land lies slightly farther to the southeast of the Hana Landfill project area. There were no significant material culture remains encountered during testing on this previously disturbed portion of land (Fredericksen et al., 1993).

Richard Pearson (1970) carried out a reconnaissance survey of Wai`anapanapa State Park in 1969. He identified 34 archaeological features within the park, including a *heiau*, a trail, a petroglyph, five shelter caves, six *ahu*, two U-shaped enclosures, three shelter walls, two *hale* platforms, and several walls and enclosures. The park lies c. 3 km to the north of the current landfill project area.

## Settlement Pattern and Land Use

Previous archaeological work in the general vicinity of the project area suggests that the coastal portion of Maui was likely utilized in precontact times for habitation, coastal marine exploitation and ceremonial purposes (Fredericksen et al., 1993; Henry and Graves, 1993; Kirch, 1985; Pearson, 1970). However, it appears unlikely that this rugged inland portion of the Hana coast was heavily utilized for post-contact ranching activities, because it contains little soil and is very rocky.

## Expected Site Types in Study Area

Given that the project area is located on a rough *a`a* flow and has been previously impacted by clearing actions associated with landfill operations, we did not anticipate finding any significant material culture remains, with the possible exception of remnants of trails and/or ranch-era walls.

## **FIELD METHODS**

A pedestrian inspection of the study area was undertaken on 26 July 2003. Pedestrian sweeps were spaced c. 5 meters apart and paralleled the contour of the existing built-up portion of the landfill. Surface visibility ranged from fair to good, and was dependent upon vegetative cover. Written notes were kept and photographs were taken with a digital camera. Erik Fredericksen and David Paul carried out the assessment-level fieldwork. Erik Fredericksen was also the project director for this archaeological study. There was no subsurface testing was conducted for the Hana Landfill archaeological assessment study. However, it was possible to inspect cuts in graded and grubbed portions of the project area.

## **RESULTS**

There were no significant material culture remains noted during the inspection of the very rocky surface of the Hana Landfill parcel. In addition, there were no significant above ground structural remains noted in the areas adjacent to the project. Given the rough surrounding *a'a* terrain, it does not appear likely that the immediate study area was substantially utilized by precontact Hawaiians or during the post-contact sugar and ranch eras. In addition, the level of previous disturbance has likely eliminated any evidence of former land use on the project area.

## SUMMARY AND CONCLUSIONS

Based on the results of the walkover, it does not appear likely that significant material culture remains are contained on the current project area. In addition, the area has been heavily impacted by ongoing landfill operations, and it is unlikely that any sites—if there were any present—have survived.

### Mitigation Recommendations

Given the location of the area covered by this archaeological assessment and the degree of mechanical alteration, no further work is recommended for the present study area. However, it is important to note that the *makai* portion of the County of Maui landfill parcel fronts the Hana coast. While this area was not inspected because it lies well outside the existing project area, it is very likely that significant cultural resources are present. In addition, the landfill encroachment area lies on a portion of State Parcel 7. This overall parcel extends well *mauka* of the present project area, and does not appear to have been impacted by earthmoving activities associated with ongoing landfill operations. There has been no previous archaeological inventory work carried out on this State parcel.

It is recommended that the State Historic Preservation Division evaluate any future County of Maui landfill expansion proposals. It may be necessary to conduct archaeological inventory survey level investigation on any unaltered portions of the County landfill Parcel 12 or the State Parcel 7. It is further recommended that the County not expand the landfill facility towards the ocean.

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**Photo 1 – Hana Landfill, in vicinity of LP-1 monitoring well. View to the northeast.**



**Photo 2 – Portion of State Parcel 7 landfill encroachment. View to the southeast.**





**Photo 3 – Previously cleared area near HL-1 monitoring well. View to the northeast.**



**Photo 4 – Area in vicinity of active landfill shown on the upper right. View to the southeast.**

# **APPENDIX C-1.**

## **Archaeological Assessment Report (2015)**



**AN ARCHAEOLOGICAL ASSESSMENT OF A 6.4-ACRE  
PORTION OF LAND IN  
KAWAIPAPA AHUPUA‘A,  
HANA DISTRICT,  
ISLAND OF MAUI (TMK (2) 1-3-06:012 [Portion])**

**Prepared per the direction of:**

**Ali Meharazin,  
A-Mehr, Inc.  
Laguna Hills, California**

**Prepared on behalf of:**

**County of Maui  
Department of Environmental Management  
Wailuku, Maui**

**Prepared by:**

**Xamanek Researches, LLC  
Pukalani, Maui**

**Erik M. Fredericksen**

***3 July 2015 (Draft)***

## ABSTRACT

Xamanek Researches, LLC conducted an archaeological assessment survey of a 6.4-acre portion of land in Hana, Maui during late May and early June 2015. The project area is located in Kawaipapa *ahupua`a*, Hana District, Maui (TMK (2) 1-3-006:012 [Portion]). The study area lies *makai* of Waikoloa Road, and is part of the existing County of Maui Hana Landfill facility. Known as the *Makai* Landfill, the County plans to abandon this portion of the landfill operation, and carry out environmental remediation work to remove the old refuse. Given the near coastal location of the project area, the State Historic Preservation Division (SHPD) had previously indicated that an archaeological inventory/assessment survey was needed (SHPD DOC NO: 1503JP01).

Project plans call for the eventual removal of the old *Makai* Landfill, with relocation of the waste matter to the current portion of the *Mauka* Landfill, which is across Waikoloa Road, and also contained on a portion of Parcel 12. Remediation efforts will necessitate the removal of the existing refuse in the abandoned site. The project encompasses an Area of Potential Effect (APE) of 6.4-acres.

The archaeological assessment survey utilized a 100% pedestrian surface survey, as well as mechanical subsurface testing. A total of 14 backhoe excavations were utilized to assess subsurface conditions along the edges of the old *Makai* Landfill. Shallow fill deposits overlaid *a`a* lava clinker in sampled portions of the project area. There were no significant material culture remains located during our surface inspection and subsurface testing of accessible portions of the project area. Given the near coastal location of the proposed remediation project, archaeological monitoring is recommended during initial earthmoving activities around the margins of the old landfill. The archaeological survey was carried out per the direction of Mr. Ali Mehrzarin, A-Mehr, Inc., on behalf of the County of Maui, Department of Environmental Management, Wailuku, Maui.

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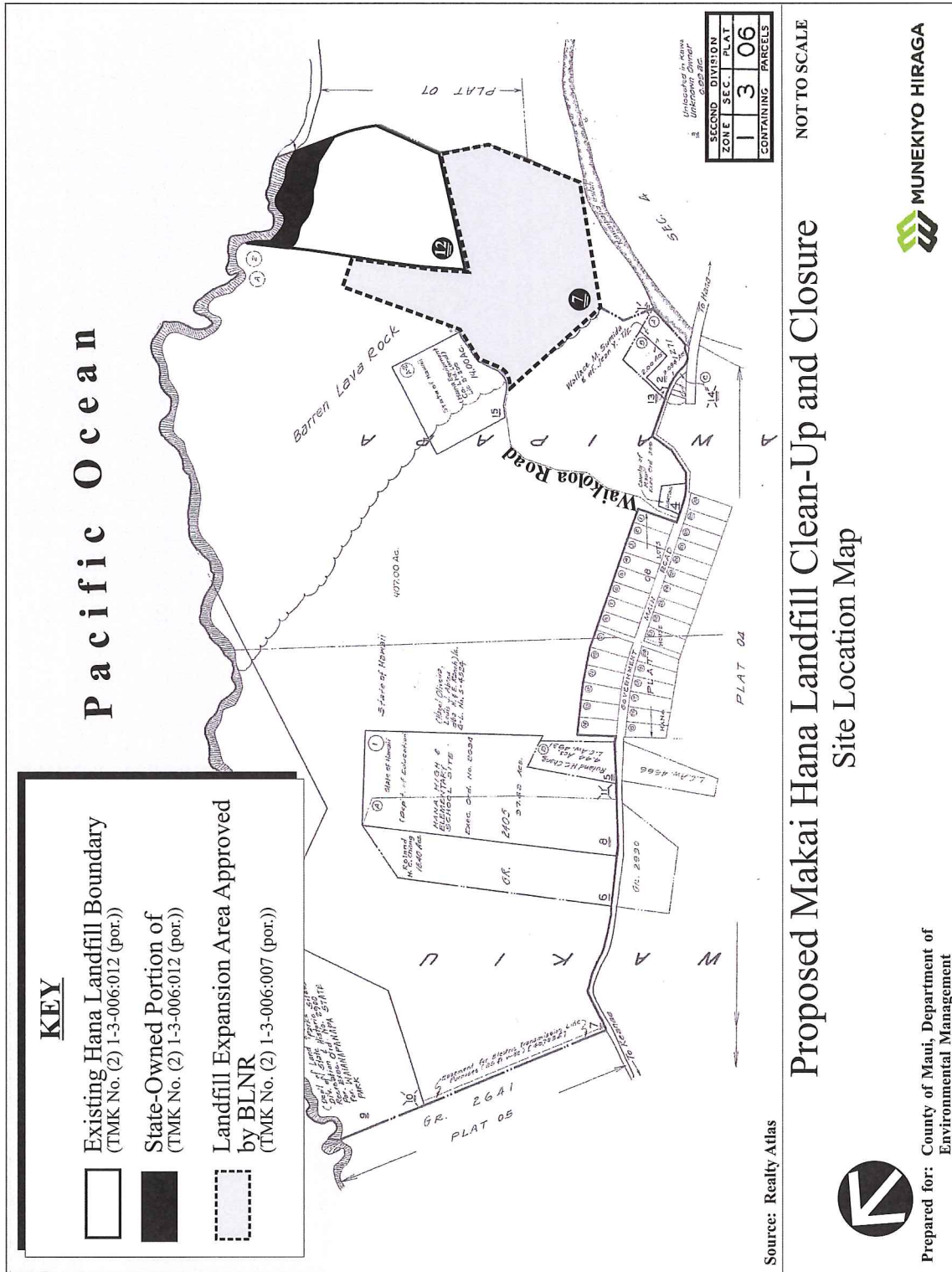


Figure 3: Tax Map Key showing Parcel 12, Hana Landfill facility parcel.



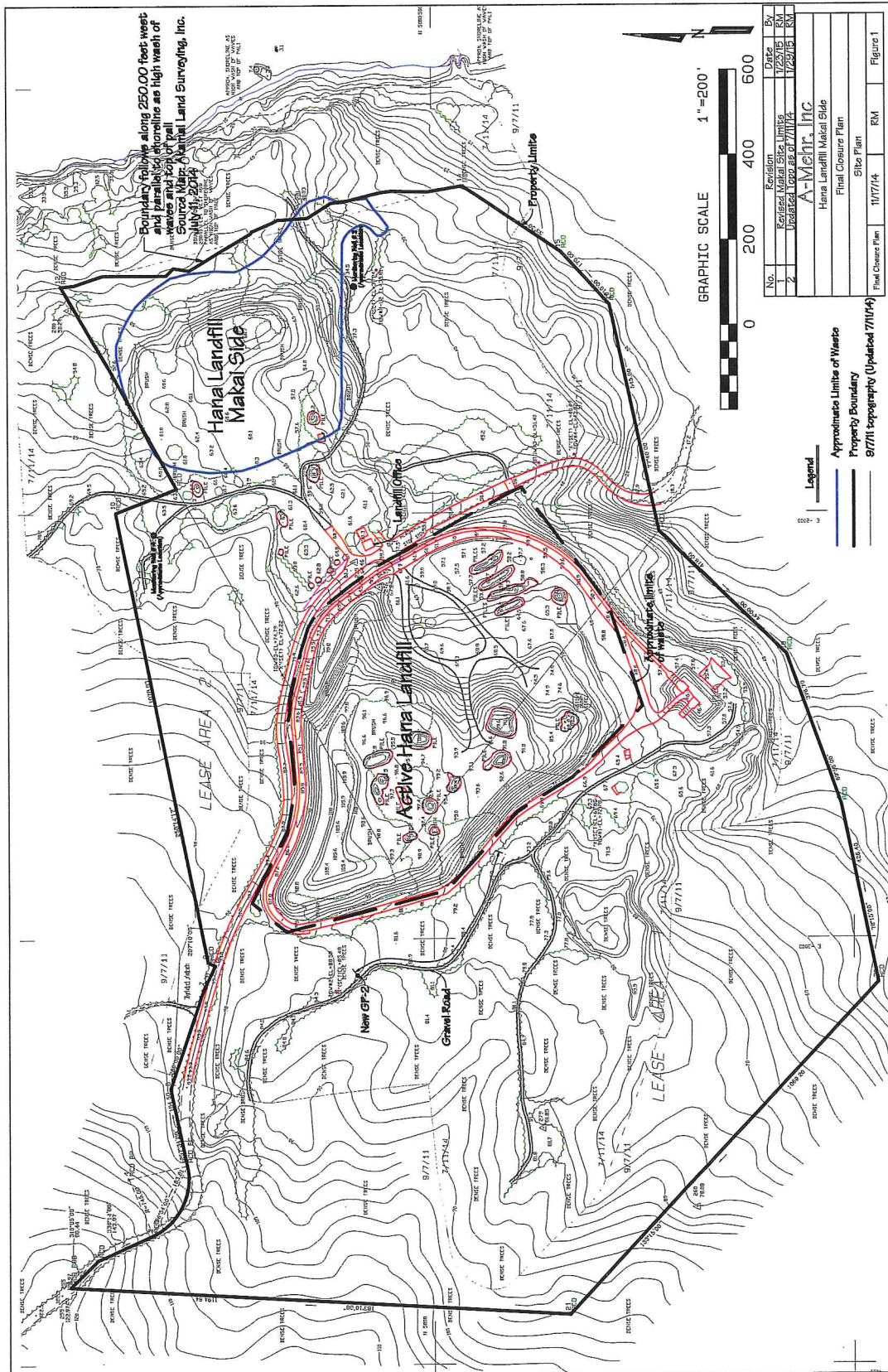


Figure 3: Topographic map depicting the Makai Landfill project area (in blue at top), Hana.

## INTRODUCTION

Mr. Mich Hirano of Munekiyo Hiraga, contacted Xamanek Researches LLC about conducting an archaeological survey on a 6.4-acre portion of land, which is located Kawaipapa *ahupua`a*, Hana, Hana District, Maui (TMK (2) 1-3-06:012 [Portion]). Given the location of the subject parcel, the State Historic Preservation Division (SHPD) Maui office had previously indicated that an archaeological survey was needed (SHPD DOC NO: 1503JP01). We were asked to prepare and submit a cost proposal for the necessary work to the project engineer, A-Mehr, Inc., and were subsequently contracted to carry out the archaeological survey for this portion of land in Hana, Maui. The project encompasses an Area of Potential Effect (APE) of 6.4-acres.

The project area is located within Kawaipapa *ahupua`a*, Hana District, Maui (TMK (2) 1-3-006:012 [Portion]). The study area lies *makai* of Waikoloa Road, and is part of the existing County of Maui Hana Landfill facility (Figures 1-4). Known as the *Makai* Landfill, the County plans to abandon this portion of landfill operation (see Figures 3 and 4), and conduct environmental remediation efforts per the Final Closure Plan (A-Mehr, Inc. February 2015). Project plans call for the eventual removal of the old *Makai* Landfill, with relocation of the refuse matter to the current portion of the *Mauka* Landfill, which is across Waikoloa Road, and also contained on a portion of Parcel 12 (refer to Figure 3). Remediation efforts will necessitate the removal of the existing refuse in the abandoned site. The following report summarizes the results of our archaeological survey. This report has been prepared per the direction of Mr. Ali Mehrazarin, A-Mehr, Inc., on behalf of the County of Maui, Department of Environmental Management, Wailuku, Maui.



## STUDY AREA

Erik Fredericksen first visited the Hana Landfill on 24 July 2003 and met with staff of the Solid Waste Division of the County of Maui. An archaeological assessment of a portion of the landfill was next conducted on 26 July 2003 (Fredericksen, 2003). No significant material culture remains were noted during the pedestrian survey for this earlier work; no subsurface testing was undertaken at the time. The project area was composed of relatively level *a`a* land, the bulk of which had been bulldozed and/or grubbed.

It is estimated that the current *Makai* Landfill study area ranges from circa (c.) 55 feet to 65 feet AMSL. The study area essentially lies on an *a`a* flow that contains generally thin soil cover. Undisturbed portions of land adjacent to the project area and some previously cleared sections to the south of the study area are generally heavily vegetated. However, grubbing and grading actions associated with ongoing County landfill operations appear to have impacted the entire project area. The bulk of the plants observed in the vicinity of the survey area consisted of non-native species, including grasses and annual weeds near the ground surface, with ironwood (*Casuarina equisetifolia*) trees dominating the overstory where trees are present. However, isolated *kukui* (*Aleurites moluccana*) and *hala* (*Pandanus tectorius*) trees were noted in some areas as well. In addition, several varieties of landscaping plants - including avocado and Monkeypod (*Albizia saman*) trees - were noted in the vicinity of the maintenance workers' utility area that is near gas monitoring well LP-1.

It was evident at the time of the surface inspection that the study area had been previously disturbed. During our walkover, scattered modern materials were observed on the existing surface. In addition, abandoned vehicles were noted in the *Makai* Landfill. Finally, recently imported cinder fill material was noted on portions of the property. This imported material is utilized on a daily basis to cover refuse in the landfill facility.

The *Makai* Hana Landfill property (Parcel 12) borders the ocean on the northwestern side<sup>1</sup> and State land essentially bounds the County property elsewhere. State Parcel 7 lies *mauka* (east) of the active landfill operation. A County road - Waikoloa Road - crosses the landfill property in a northeast/southwest manner. It is estimated that this portion of Maui receives about 100 inches of annual precipitation. Soils in the general area are composed of Malama extremely stony muck (3-25% slopes), which consists of a thick layer of dark organic muck that overlies *a`a* lava (Foote et al.,

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<sup>1</sup> A portion of Parcel 12 east of the *Makai* Landfill APE is State managed.

1972). This type of soil is very permeable, has a slow run-off and is subject to a slight erosion hazard.

## BACKGROUND RESEARCH

### Legendary History

Hana is a place where the landscape was reportedly created by gods and goddesses, and a residence of many chiefs of Maui (Cleghorn and Rogers, 1987, p. 4). Myths are associated with 6 deities – Pele, Pu`uhele, Kana, Kanaloa, Maui, and Ku`ula. Pele was said to have been killed by her sister Namakaokaha`i, and her physical remains left to form the hill called Ka Iwi o Pele, located on the coast. Another version has Pele creating `Alau Island, just offshore of Ka Iwi o Pele (Ibid).

Pu`uhele, a sister of Pele, was said to have been brought to Hana as a child, but was left behind because she continually bit the breast as she was being fed. The place where she stayed was Pu`u Ka`uiki. In another version, she is not born as human, but as a bloody fetus, which was thrown away by Pele and another of her sisters. Pu`uhele landed at Nu`u, and was turned into a beautiful woman who traveled to Wananalu, where she was killed for trespassing. The hill, Ka`uiki rises from the spot where she was buried (Cleghorn and Rogers, p. 6).

Another legendary resident was Ku`ula, who introduced the octopus lure, the fishpond, and the fishhook to human beings. He lived with his wife Hina, and son Ai`ai at the foot of Ka Iwi o Pele, and constructed and filled with fish, the first fishpond for the chief of Hana. Ai`ai, taught the people of Maui and the other islands how to use the things his father had given them, and how to worship Ku`ula (Ibid., p. 7). Throughout the islands fishing shrines called *ko`a*, were built in the past, which contain Ku`ula stones, oblong water-worn stones, made into alters or houses. Here rituals were performed to assure fishermen an abundant catch from the sea (Kolb, Orr and Conte, 1993, p 11). He also erected the stone, Makakiloia, on Ka`uiki which fishermen have since used as a vantage point for finding schools of fish (Cleghorn and Rogers, p.7).

The deities Kane and Kanaloa were said to be residents of Maui in ancient times. Two rock pillars just off the base of *Pu`u Ka`uiki*, represent the coconut trees in their garden. Several legends of Maui are connected with Hana. One has him fishing in the fishing grounds known as Po`o, in the area of Ka Iwi o Pele. He tries to catch the fish Luehu on the night of Lono, an act which would unite all of the islands into one. As he hooked the fish and tried to bring it in, his brothers broke the spell by looking back, and the fish escaped, thus losing the chance to unite the islands. Maui is also said to have

stood on Pu`u Ka`uiki, lifted the sky at Hana, so that people could stand upright. Hana is sometimes referred to as “Hana of the low sky” (Ibid.).

## **Precontact period**

Hana was a favorite place home for many chiefs. One of the earliest was Hua, who lived in the 12<sup>th</sup> century and is credited with building 2 *heiau*, Honualua and Kaiawalu, on Pu`u Ka`uiki, neither of which are still in existence (Ibid.). It is said that a Protestant and a Catholic church are built on those sites today (Kolb, Orr and Conte, 1993, p. 12). Hua is said to have caused a 3 ½ year drought, by killing a high priest who criticized his wars. He reportedly died on Hawai`i, the victim of thirst and famine. A saying – “rattling are the bones of Hua in the sun” is used as an admonition to those who might be wicked (Ibid.).

During the 17<sup>th</sup> century, the districts of Maui were united by high chief Pi`ilani. At the same time, much of the island of Hawai`i was united under another chief, `Umi. While conditions of warfare often existed between the islands, a period of peace prevailed when `Umi married Pi`ilani’s daughter, Pi`ikea (Cleghorn and Rogers, p. 9). Pi`ilani’s sons, Kihapi`ilani and Lonopi`ilani fought for control of Maui. Kihapi`ilani killed his brother, with the aid of `Umi, who sent an invasion fleet to Hana. Kihapi`ilani’s subsequent reign was a peaceful one. He is credited with building the paved roadway that goes around the island of Maui (Kolb, Orr, and Conte, p. 13).

Hana continued to remain under Maui chiefs until the middle of the 18<sup>th</sup> century when both Hana and the Kipahulu district fell to the Hawai`i Island chief, Kalani`opu`u. Maui chief Kamehamehanui tried in vain for twenty years to recapture the territory. Kalani`opu`u repeatedly tried to conquer Maui, but the younger brother of Kamehamehanui, Kahekili stubbornly resisted (Kolb, Orr, and Conte, p. 13). Kalani`opu`u died in 1782, and upon hearing of his death, Kahekili attacked his fortress which was located at Pu`u Ka`uiki. The defenders were able to hold out for more than a year because they possessed a source of fresh water. When Kahekili learned of this water supply, he cut it off and quickly defeated the Hawaiian warriors (Cleghorn and Rogers, p. 10). Kahekili once again ruled the island of Maui, and died of old age in 1794. The island of Maui then fell to another Hawai`i Island chief, Kamehameha, who eventually conquered the other islands as well and established the kingdom of Hawai`i (Ibid.).

## **Early post-contact period**

In November of 1778, the ship Resolution, under the leadership of Captain James Cook, made landfall on Maui. While anchored off Hana, Captain Cook entertained Kalani`opu`u and Kamehameha aboard ship and Captain Clerke, aboard the sister ship Discovery, entertained Kahekili while anchored off Wailuku. Neither Cook nor Clerke knew of the rivalry between these chiefs (Ibid.). In fact, Cook thought that Kalani`opu`u and Kamehameha were chiefs of the Hana region.

Traditions and early 19<sup>th</sup> century records add information about this period. Pu'u Ka'uiki is known as the birthplace of Ka'ahumanu, the favorite wife of Kamehameha I. Hana was the land (*'aina*) of her father, *ali'i nui* Ke'eaumoku Papaiahehe. When he died in 1804, it passed to Ka'ahumanu's brother, Kahekili Ke'eaumoku and then to Ka'ahumanu in 1824. Upon her death in 1832, her *'aina* and title passed to her niece Elizabeth Kaho'anoku Kina'u, daughter of her sister, Kaheihimalie and Kamehameha I (Kolb, Orr and Conte, p. 14).

Kina'u died of mumps in 1839, and her *'aina* went to her 4 month old daughter, Victoria Kamamalu. John Papa 'Ti acted as her executor. Her older brothers Alexander Liholiho and Lota Kapuaiwa Kamehameha became kings Kamehameha IV and V, respectively (Ibid.). Kamamalu was forced to turn over most of her land to the government during the Great Mahele of 1848.

The process of land grants is discussed by Chinen (1958). Native Hawaiians wishing to claim lands on which they had been living were required to appear before the Board of Commissioners to Quiet Land Titles and present testimony. When a claim was accepted, a Land Commission Award was granted. The new owner must then pay one third the value of the land to the government in cash or unused land. When this was done, a Royal Patent was then issued, giving the tenant full title to the land (Ibid., pp. 12 – 14). By 1850, the government began selling lands to Native Hawaiians and foreigners, and these lands were noted as Royal Patent Grants, or simply – Grants (Ibid., p. 27).

The 6.4-acre *Makai* Landfill project APE is a portion of TMK 1-3-06:012, which consists of 34.38 acres and is owned by the State of Hawaii. The Hana Landfill facility is currently managed and operated by the County of Maui.

Handy and Handy (1972, p. 505) state that subsistence in this area depended mainly on sweet potatoes and fish. Land Commission Award records for parcels in the general vicinity to the south indicate that land was used for taro production (both wet and dry), sweet potatoes, coconuts and sugar cane. Pigs were also likely raised.

## **Post-1850 period**

The latter part of the 19<sup>th</sup> century saw the rise of sugar production as an increasingly important economic activity in the Hana area. Begun in 1851 by a sea captain, George W. Wilfong, the Hana Plantation was one of the earliest commercial ventures in the islands (Kolb, Orr and Conte, p. 16). He did not work well with native Hawaiians, who found his methods intolerable. He sought labor elsewhere, and imported Chinese workers to Hana in 1852. The Chinese were much more accustomed to long hours of tedious contract labor, but left the plantation after their three-year labor contracts had been fulfilled. They then went into business for themselves, or obtained land to farm (Youngblood, 1992, pp. 44-45). Wilfong's sugar mill burned to the ground in the early 1850's. Two Danish brothers, August and Oscar Unna re-established Hana Plantation in 1862 (Ibid.). Their plantation agents were C. Brewer and Co., a trade company founded

by sea captain James Hunnewell in 1826, and taken over by yet another sea captain, Charles Brewer in 1843 (Kolb, Orr, and Conte, p. 17).

By 1868 a new source of immigrant labor had to be found, and Japanese laborers were imported to Hana. By 1876 a Reciprocity Treaty had been negotiated between King Kalakaua and the United States, which did away with the 2 cent per pound tariff on Hawaiian sugar. In 1883, there were 6 separate sugar plantations arrayed along the rocky Hana Coast; Kaeleku Sugar Co., Hamoa Agricultural Co., Kawaipapa Agricultural Co., Hana Sugar Co., Reciprocity Sugar Co., and Haneo'o Agricultural Co. (Youngblood, pp. 46-47).

August Unna and his Danish engineer, Christian Hedemann, modernized the Hana Plantation, replacing the mule-driven carts with locomotives, and 3-roller mills in the early 1880's. Labor shortages plagued the Hana operation, however, and additional laborers were recruited from the New Hebrides and Gilbert Islands (Kolb, Orr, and Conte, p. 18). All of these expenses left Unna heavily in debt, and upon his death in 1885, the Hana Plantation was placed in receivership and sold in 1889 to M. S. Grinbaum & Company, its major creditor. The holdings of Hana Plantation (founded 1851) and the old Reciprocity Sugar Company<sup>2</sup> (founded 1883) were combined to establish the Hana Plantation Company (Ibid.).

In 1905 the company was reorganized and its name changed to Ka'eleku Sugar Company. Plantation agents T. H. Davies & Co. assumed ownership in 1908, and the sugar plantation continued operation. In 1933 the company changed owners yet again, to the estate of W. G. Irwin and C. Brewer & Co., both previous owners at one time. Records from the Hawaii Sugar Planters Association show that on December 31, 1945, Ka'eleku Sugar Company was liquidated (Kolb, Orr and Conte, p. 20). Sugar workers were becoming unionized, and C. Brewer & Co. feared that the Hana operation could not pay the higher wages that would be demanded. Rather than risk antagonizing the union, which might put their other sugar operations in jeopardy, they closed Ka'eleku, leaving hundreds of plantation workers unemployed (Youngblood, p. 67).

Paul I. Fagan had purchased the Hana Sugar Company from the Unna brothers in the 1930's, and had left his investment alone until the mid 1940's, when he decided to retire in Hana. He saw that sugar did not have a bright future in Hana, and decided to undertake cattle ranching. He closed his cattle ranch on the east end of Moloka'i, acquired 14,000 acres of land in and around Hana, and shipped his white-faced Herefords to Maui (Ibid., p. 70). Sugarcane land was planted with pangola range grass to feed the cattle. Ranch lands were cleared in the 1960's with bulldozers, resulting in numerous piles of wood and dirt, which are still apparent in some areas today. In addition, alien

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<sup>2</sup> Both Hana Plantation and Reciprocity Sugar Company had their own mills and piers. Reciprocity Sugar Company closed down in 1902. Much of its land was leased to Ka'eleku Sugar Company, which had about 15,000 acres in the Hana area by 1913, about one-fifth of which was cultivated. In 1940, Ka'eleku produced 8,000 tons of sugar, although the mill was capable of an output 4 times as great (Cleghorn and Rogers, pp. 11-12).

plant species, such as lantana and Christmasberry have come to dominate many previously disturbed areas.

Not only did the shift from sugar to cattle take place, but a new industry – the visitor industry of Hana began. Fagan saw tourism as a way to produce jobs and money for the people of Hana, and built the first resort hotel, the Ka'uiki Inn in 1946 (later renamed the Hotel Hana-Maui). This facility was designed as a first-class accommodation for first-class travelers (Ibid., p. 73). Hana was eventually connected to the rest of Maui when the State paved the Hana Highway in 1962, with additional improvements in 1982. More and more tourists find their way to the Hana Coast, but the town still maintains the sort of isolation it has always had (Ibid., p. 81).

## Oral History

On July 19, 1996 a telephone interview was conducted with Mrs. Lucy Phillips, whose name had been given to Xamanek Researches by Mr. Carl Lindquist, a now deceased, long time resident and realtor based in Hana. A parcel to the southeast of the current project area was formerly owned by Mrs. Phillips. She sold this parcel in about 1994. It had belonged to her husband's family for many generations, and the individual buried in a post-contact grave was a relative of her husband. She did not know the name or when the person died. However, she remembered that the grave had been there for a very long time. She related that her husband, Soloman was born in 1913, and lived with his grandfather in a house that was located in the center of the property, near the grave site. They kept animals and grew vegetables, primarily sweet potatoes. Lucy and Soloman were married in the early 1930s, and lived on the property for a number of years. Mrs. Phillips said that there was another house to the east, and one to the west. The owners of these houses traded their lands to the Hana Ranch Company for lands on the *mauka* side of the road.<sup>3</sup> However, her husband's family, although asked to trade their land, did not move. The fact that their ancestor was buried on the land may have had some influence on their decision. Her husband, Soloman, worked for the Ka'eleku Plantation. She said that they subsequently moved to the Kahului side in the 1930s<sup>4</sup> when the Hana mill closed. He was hired by H. C. & S. and they lived in the Pu'unene Camp. Mrs. Phillips said that many of the Hana plantation workers moved from Hana at this time, in order to take up jobs with H. C. & S.

## Mahele Awards<sup>5</sup>

The study area is a 6.4-acre portion of TMK 1-3-06:012, and was formerly owned by the State of Hawaii, but is now administered by the County of Maui. A total of five Land Commission Awards for Kawaipapa *Ahupua`a* are present in the Indices and in the

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<sup>3</sup> The lands surrounding the parcel are shown as being owned by Rosewood Hotels, Inc., who acquired them from Hana Ranch. More recently, Hana Ranch sold the lands to Keola Hana Maui Corp.

<sup>4</sup> According to records Ka'eleku closed in 1945. It has been reported that Paul Fagan personally went to Alexander and Baldwin and persuaded them to hire displaced Hana workers at their central Maui plantation (Youngblood, p. 70).

<sup>5</sup> Refer to Table 3 in Appendix B for a listing of LCAs near the current project area.

Wai'hona `Aina database (see Table 1). They are: LCA 4534, 0.70 acres in 1 *apana* to Mose Ulunahele for *kihapai* and coconuts; LCA 4566, 5.19 acres 1 of 2 *apana* to Waihineaa (ND); LCA 4846, 7.00 acres in 1 of 3 *apana* to Kaholokai for *kihapai*; LCA 5149 claimed by Kahinawa, but not awarded; and LCA 5185B claimed by Kaholokai and awarded under LCA 4846.

There were two awards in the smaller, adjacent Niumalu *Ahupua`a* to the east. These awards included LCA 4739-1, 2, 3, 15.65 acres in 1 *apana* to Miki for taro (wet) and sweet potato; and LCA 5180, 17.17 acres in 1 *apana* to Kuamiohea.

The adjacent Wakiu *Ahupua`a* to the west of Kawaipapa *Ahupua`a* contains 4 awards. These Land Commission Awards consist of LCA 4665, 11.90 acres in 1 *apana* to Pua Lau for potatoes; LCA 4666, 5.14 acres in 1 *apana* to Puhake; LCA 4844 claimed by Kuana, but not awarded; and LCA 4931, 5.00 acres in 1 *apana* to Kaahina for a house lot. While there are not many Land Commission Awards that were awarded in Kawaipapa *Ahupua`a* as well as the two adjacent *ahupua`a*, it is interesting to note that available information indicates that awards were for garden plots, coconut, wet taro and house lots.

**Table 1: Land Commission Awards in the vicinity of the project area**

LCA	TMK	<i>Ahupua`a</i>	Claimant	Land Use	Size <sup>6</sup>	Comments
4534	1-3-4	Kawaipapa	Ulunahele, Mose	Kihapai, coconuts	0.70	1 <i>apana</i>
4566	1-4-3	Kawaipapa	Waihineaa	ND	5.19	1 of 2 <i>apana</i> awarded
4846	ND <sup>7</sup>	Kawaipapa	Kaholokai	kihapai	7.00	1 of 3 <i>apana</i> awarded
5149	ND	Kawaipapa	Kahinawa	ND	-	No award
5185B	ND	Kawaipapa	Kaholokai	ND	-	Award under LCA 4846
4739-1, 2, 3	1-4-3, 1-4-5, 1-4-6	Niumalu	Miki	taro (wet), sweet potato	15.65	1 <i>apana</i>
5180	1-4-5, 1-4-6	Niumalu	Kuamiohea	ND	17.17	1 <i>apana</i>
4665	ND	Wakiu	Pua Lau	Gov't Road to east, potatoes	11.90	1 <i>apana</i> (?)
4666	ND	Wakiu	Puhake	ND	5.14	1 <i>apana</i>
4844	ND	Wakiu	Kuana	ND	-	No award
4931	ND	Wakiu	Kaahina	ND	5.00	House lot

<sup>6</sup> Size in acres

<sup>7</sup> ND = No data

## **Current period**

Presently, ranching activities continue as an important facet in the local economy. Tourism continues to grow; however, and plays an increasingly significant economic role in Hana. Finally, development of this area, as elsewhere on our island, continues to expand and place upward pressure on property values.

Historic agricultural land use in the Hana area has undoubtedly had an effect on surface and subsurface archaeological features that were formerly present. As Cleghorn states in one of the earlier reports on archaeological work in Hana (1988, p. 4):

“...this area was extensively utilized in historic times, first for commercial sugar production and later for cattle ranching. There is strong possibility that these activities obliterated evidence of earlier land use, leaving an extensively flattened and modified landscape with no remaining surface archaeological features.”



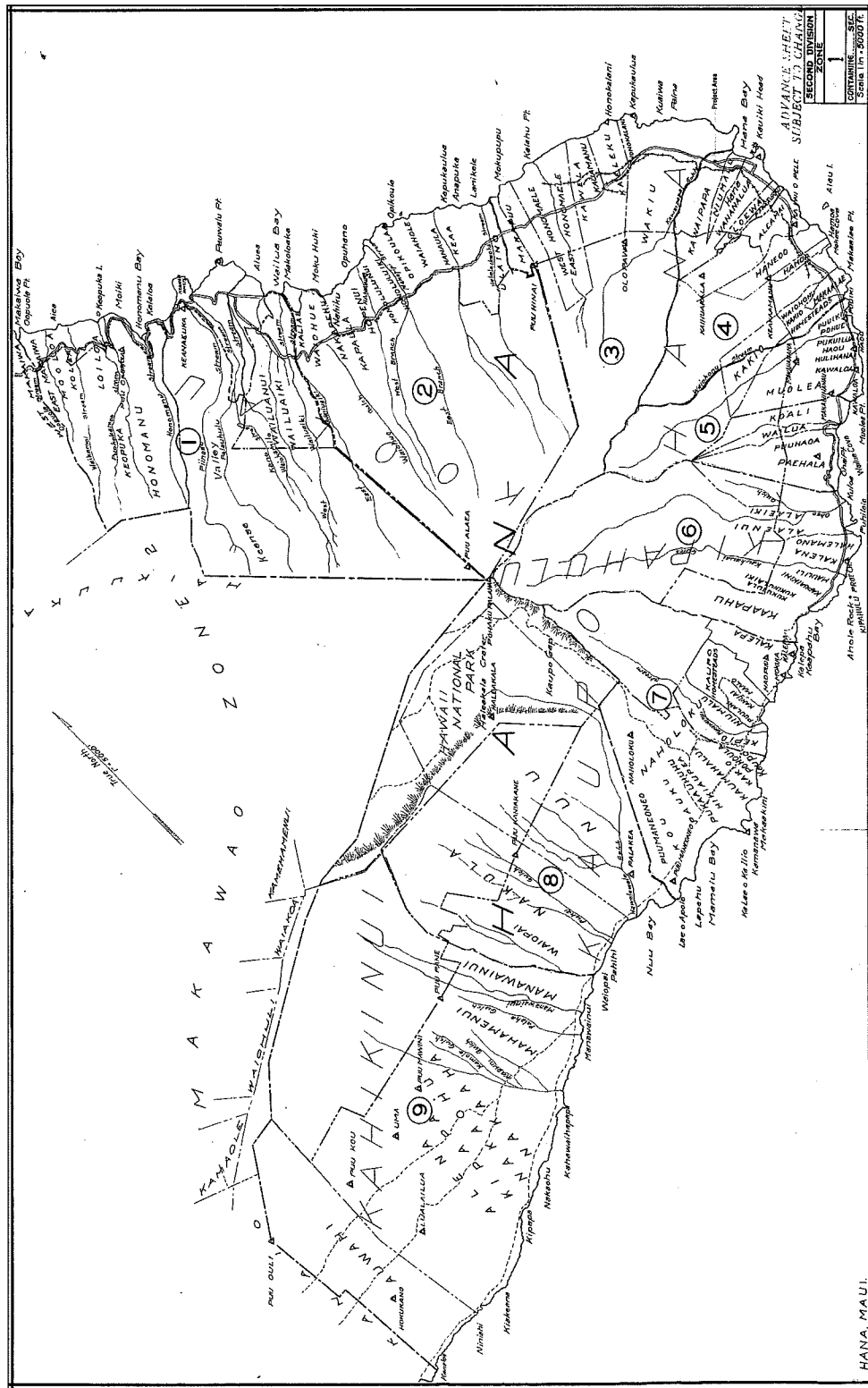


Figure 5: Tax Map Key depicting Hana lands.

## PREVIOUS ARCHAEOLOGICAL WORK

### Previous Archaeology in the general area<sup>8</sup>

In his 1931 survey of *heiau* on Maui, Winslow Walker identified several ceremonial structures in this area of Hana District: Site 102, Pi`ilanihale Heiau on Kalahu Point; Site 103 - Kuakeali`i Heiau north of Wai`anapanapa Park; Site 104, Ohala Heiau on Pukaulua Point; Site 105 - Kaniomku Heiau *mauka* of Hana Highway, Site 106 - Kawaipapa Heiau *mauka* (southwest) of Hana Highway and the project area; Site 108 – an unnamed heiau on Keanini Point; Site 109 – Kauleiula Heiau on Nanualele Point; Site 110 – an unnamed *heiau* in Kainalimu to the north of Hana Bay; Site 111 - Honua`ula Heiau near the base of Pu`u Ka`uiki; and Site 112 – Kuawalu Heiau to the southwest of Pu`u Ka`uiki.

An archaeological survey was carried out by Lynn Nakkim, who lived in Hana for about 25 years. She visited several of the *heiau* that were reported by Walker, and added details not mentioned by him. She was unable to relocate Pakiokio Heiau<sup>9</sup> (Nakkim, 1969-70, in Kolb, Orr, and Conte, p. 27).

As part of the State Historical Sites Survey conducted in 1973, Hommon and Connolly mapped and surveyed sites in Kawaipapa *ahupua`a* some of which had been noted by Nakkim. A walled complex she referred to is called the Hamoa Complex and given the site number 50-50-13-1487. This complex consists of over 100 features, most of which appear to have agricultural functions. They fall into 5 types – agricultural clearings (100); walls (6); terraces (3); a ditch with rubble walls, and 2 stone mounds (Hommon and Connolly, 1973, in Kolb, Orr and Conte, pp. 28-29). Again Pakiokio *heiau* could not be relocated, but Connolly surveyed and mapped Hale O Lono *heiau* (Site 50-50-13-123) and recommended that it be given “valuable status”, because of its interpretive and research potential and close association with Kaluanui *heiau* (Ibid.). Kaluanui *heiau* (Site 50-50-13-120) was also surveyed, and its location “on a small knoll affording a very impressive view of Hawaii, the valleys between the site and the sea, and Alau Island” are noted. It was recommended for “valuable status” as Kaluanui Complex (Ibid., p. 30).

In 1987, the B. P. Bishop Museum conducted preliminary archaeological investigation of Hana Ranch Lands. The study consisted of 3 tasks – the review of literature, analysis of aerial photographs of Hana Ranch lands, and a brief field inspection

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<sup>8</sup> Refer to Figure 12 in Appendix C for the locations of archaeological projects in the Hana area.

<sup>9</sup> Site 121 lies to the east of the *heiau* that are mentioned above.

to determine the potential of archaeological sites found on the photos. A search of Bishop Museum files revealed 32 archaeological sites on ranch lands, 20 of which were *heiau*, most of which are destroyed. Other sites include 5 fishponds, the fortress of Ka'uiki Hill, pictographs, and various habitation sites (Cleghorn and Rogers, 1987, i).

As a result of the aerial photo analysis and field inspection, an additional 16 sites have been minimally recorded, most of which are probably related to agriculture or habitation functions (Ibid., ii).

Sixteen sites were investigated in the 1987 survey, including C-shapes, *`ili`ili* pavements, terraced platforms, walls, lava tubes, a rock shelter, and various stone structures of undetermined function (Ibid., pp. 18-19). Most sites are associated with either agricultural activities or habitation. A total of 48 archaeological sites have been recorded on ranch lands. Of these, about 20 have been destroyed - most likely as a result of sugarcane cultivation. The remaining sites show various degrees of disturbance. It was noted that every vegetated area that showed up on the aerial photos and was inspected by the researchers contained archaeological site remains (Ibid., p. 26).

Former Maui SHPD staff archaeologist, Theresa Donham, recorded a site on Kaholaiki Beach, near Mokae Cove in Mokae *ahupua`a* (Site 50-50-13-2835). This appears to be a large habitation site which includes water-worn stone pavements containing pockets of bone and shell midden and charcoal concentrations. Human remains were found eroding from the beach cut, and were subsequently disinterred by Donham (1991, in Kolb, Orr and Conte, p. 32).

Four hundred acres of land in Haneo`o, Aleamai, and Papa`auhau were surveyed for a proposed country club by Cultural Surveys Hawaii. These lands were *mauka* of Hana Highway, south of Hana town. They found 51 archaeological sites, 13 of which were interpreted as habitation sites and the remainder as agricultural. Radiocarbon dates were obtained for 3 habitation sites - AD 1345-1650; AD 1425-1959 and AD 1640-1950 (Borthwick et al., 1992, Ibid.). The majority of the survey area had been heavily impacted by sugarcane cultivation and ranching activities, and the sites were found scattered in areas located on the fringe of the cane fields.

An archaeological survey of Hamoa *ahupua`a* to the southeast of Hana Town was inspired by the nomination of the Hamoa Archaeological complex to the Historic Sites Register in 1990. Community members felt that the boundaries were incomplete, and that many more sites existed *mauka* of Hana Highway as well. The Hana Cultural Center spearheaded a volunteer program to complete the survey at a minimum cost (Kolb, Orr and Conte, pp. 2-5).

A total of 51 acres were surveyed *mauka* of Hana highway, and 74 features were located and mapped. Pakiokio *Heiau* (Site 50-50-13-121), which had not been found by earlier surveys, was located during this survey. The various sites were classified by feature types. These feature types included: Alignment (1=1.3%); Enclosure (8=10.7%); Modified Outcrop (2=2.7%); Mulch Pit (31=41.3%); Railroad grade (1=1.3%); Rock

Shelter (4=5.4%); Terrace (19=25.6%); Wall (7=9.4%); and Walled Terrace (1=1.3%) [Ibid., p. 37].

Limited excavation was undertaken by volunteers at 10 features – 5 located *mauka* of Hana Highway and 5 on the *makai* side, which included Kaluanui and Hale O Lono *heiau*, the Hamoa Complex and Kaholaiki dune. Radiocarbon dates were obtained at Kaluanui *heiau* (AD 1659-1955); Hale O Lono *heiau* (AD 1440-1954, 1443-1953, 1419-1660); Kaholaiki Sand dune (AD 1173-1380); Site 50-50-13-3721 – a rectangular habitation enclosure (AD 1295-1955); and Site 50-50-13-3724 – a double-U shaped agricultural wall (AD 1459-1954) [Ibid., pp. 43-45].

Kolb discusses the settlement patterns in the general area (Ibid., pp. 96-97):

“A number of models of Hawaiian cultural change currently exist (e.g. Cordy 1981, Kirch 1990), however most agree that colonizing settlements were first established on the windward portions of the Hawaiian chain ca. A.D. 300-600. As the population grew, permanent settlements in the agriculturally favorable, windward areas probably increased in size and number ca. 600-1100. In windward areas like Hamoa, residents intermittently exploited coastal resources such as ocean fish and shellfish, and used upland areas for dryland agricultural production. Permanent shelters by permanent residential ritual structures. [sic.] By 1650, permanent coastal settlements focused upon intensive exploitation of ocean resources while permanent upland settlements focused more upon agricultural production of dryland crops...

At the height of traditional society ca. 1650-1820, Hawaiian society had reached its apex in terms of population growth and social complexity. No doubt the same existed in Hamoa as well. The regional chronology of Hamoa consists at present of only six age determinations for a concentration of two habitation sites, one agricultural site, and two *heiau* sites. All of these sites date to after the island was unified, and Hana district was already integrated to the rest of the island. The earliest date comes from Kaholaiki, the coastal site in Mokae at 67% confidence. The basal pavement dates to the thirteenth century, about the time of the paramount chief Hua, using 20 years per generation of the chiefly lineages... Hale O Lono and habitation Site #3721 date ca. 1400-1650, before island unification under Pi'ilani, when the independent line of chiefs Hana ruled [sic.]. The remaining two sites, the agricultural enclosure at #3724 and Kaluanui *Heiau* date after ca. 1650, the two centuries preceding contact which represent the peak of traditional Hawai'i social complexity. Thus it is no surprise that an upland agricultural site as well as the largest *heiau* in the area date to this period before contact, when complex society reached a peak, and agricultural output was at its peak to not only feed the populace but to provide adequate surplus for the chiefs and their retainers and warriors.”...

Kolb concludes that the Hamoa archaeological landscape is “extremely complete and diverse, incorporating a mixture of habitation, agriculture, ritual and post-contact sites.” While this represents a typical aboriginal pattern, Hamoa is unique in that so much remains in an area that had been extensively modified by bulldozing and cattle ranching (Ibid., pp. 104-105). One can only speculate on what has been destroyed in this and other portions of Hana that have been impacted by post-contact commercial agricultural and ranching activities.

Other archaeological studies have been carried out in the adjacent Wakiu *ahupua`a* to the north of Kawaipapa *ahupua`a*. These studies include a 1970 reconnaissance survey of Wai`anapanapa State Park, a 1975 walk through study of a portion of a large burial area to the northeast of the Hana High School campus, a 1984 reconnaissance of this burial area and cemetery, and a more recent 2002-2003 inventory survey of Wai`anapanapa State Park, a portion of which also lies in Kawaipapa *ahupua`a*.

Wai`anapanapa State Park lies to the northwest of the current project area. Richard Pearson (1970) originally carried out the first work in the park area—a reconnaissance level survey. He identified 34 archaeological features within the park during this earlier survey, including a *heiau*, a trail, a petroglyph, five shelter caves, six *ahu*, two U-shaped enclosures, three shelter walls, two *hale* platforms, and several walls and enclosures.

A recent inventory survey of Wai`anapanapa State Park (c. 111 acres) was carried out in 2002-2003 (Haun et al., 2004). This more intensive study documented a total of 59 sites with at least 119 features. Sites included walls, rock cairns, rock mounds, terraces, enclosures, U- and L-shaped enclosures, C-shapes, platforms, trails, stone uprights, overhangs, caves, alignments, cemeteries, and miscellaneous (modern) sites. Functional types included temporary and permanent habitation, ceremonial, agriculture, burial, marker, boundary, rock art, livestock containment, and transportation.

Archaeological studies at Wai`anapanapa State Park produced examples of unusual cultural adaptive strategies in the general area (Pearson, 1970, Haun et al., 2004). In terms of prehistoric settlement patterns, the Hana area exemplifies aspects of human ecology not as readily accessible anywhere else in Hawaii. Exploitation of the wet, exposed windward shores of the islands resulted in variations in settlement patterns which included scattered homesteads instead of the more typical nucleated villages found elsewhere (Pearson, 1970, pp. 25-26). Because of the dense undergrowth typical of the Hana areas, discovery of relevant features has been difficult in some areas (Ibid.). Also, agricultural and ranching activities, and more recently tourism construction, have undoubtedly destroyed many sites (Ibid., pp. 27-29).

### **Kawaipapa *Ahupua`a* studies**

A few archaeological investigations have been carried out in the general area near Kawaipapa *ahupua`a*. One of these projects consisted of a 1984 reconnaissance study of a c. 14-acre parcel of land to the southwest (Landrum, 1984). There were no significant precontact cultural resources located during this reconnaissance level investigation. A second reconnaissance survey was carried out by Kennedy in 1990. This study documented Kauleiula Heiau (Site 109). Xamanek Researches conducted an archaeological assessment of a portion of the Hana Landfill that was slated to expand onto State land (Fredericksen, 2003). No significant cultural materials were located during this study.

Xamanek Researches carried out an archaeological monitoring program for the Hana Ballpark light installation project in 2002 (Fredericksen and Fredericksen, 2002). The ballpark lies an estimated 1.5 km to the southeast of the project area. One probable precontact burial was located during this project and designated Site 50-50-13-5190. In addition, three indigenous stone tools – a hammerstone, a hammerstone/chopper, and a pecking stone were located during the monitoring process. However, there were no intact cultural deposits encountered. The Site 5190 burial was preserved in place with the assistance of Mr. Mike Minn, Maui/Lana'i Islands Burial Council (MLIBC) representative for Hana

Two additional probable precontact burials were inadvertently disturbed during the course of separate ongoing improvement projects on the grounds of the Hotel Hana Maui, which is adjacent to portions of the Hana Ballpark. Xamanek Researches was called in to mitigate both finds. The first burial was encountered in 2003 in a previously disturbed area that was ultimately transformed into a spa for the Hotel Hana Maui (Fredericksen, 2003). This burial had been partially disturbed by the previous placement of a water line, as well as general landscaping actions. Three water worn cobbles and 4 pieces of weathered coral were found associated with the burial pit. The burial was preserved in place and designated Site 5500. The second burial was located near the end of 2004 during excavation activities associated with the installation of underground utilities for the hotel (Fredericksen, 2004). This burial was essentially undisturbed and is interpreted as a probable precontact burial, based on the presence of weathered coral and a basalt chopper. Both sets of human remains were preserved in place with the help of Mr. Mike Minn, past MLIBC representative for Hana.

Four archaeological inventory surveys have been conducted in the general vicinity of the Makai Landfill project area. Two earlier studies in Niumalu *ahupua'a* consist of two parcels that lie within about 1.5 km southwest (*mauka*) of the study area that were surveyed in 1993. Two more recent surveys were carried out on two nearby parcels in Kawaipapa *ahupua'a* in 2006.

The Hana Medical Center inventory survey was conducted by PHRI in 1993 (Henry and Graves, 1993). This archaeological study located four sites—two complexes (Site 3150 and Site 3153), and two boundary walls (Site 3151 and Site 3152). Sites 3150 and 3153 were interpreted as temporary habitation areas that appeared to have been utilized periodically, possibly during the plantation era. All sites were interpreted as post-contact features. Data recovery work was carried out on Site 3150 in 1996 (Wulzen et al., 1996). Material culture remains recovered during testing were associated with the latter 1800s.

Xamanek Researches conducted an inventory survey for the then planned County of Maui Hana Fire Station complex in 1993. This parcel of land lies to the southwest of the Sinenci property. There were no significant material culture remains encountered during testing on this previously disturbed portion of land (Fredericksen et al., 1993).

A parcel (TMK (2) 1-4-06:021) in Kawaipapa *ahupua'a* was surveyed in the summer of 2006 (Chun and Dillon, 2006). A total of three sites with five features were identified during this earlier survey. Site 6068 consists of a complex that includes a platform that is interpreted as a possible burial (Feature B). Site 6069, a post-contact era boundary wall, was determined to have been impacted by previous clearing activities on the parcel. Finally, Site 6070 consists of two sugar plantation era train cars, which are in generally poor condition.

Xamanek Researches LLC carried out an archaeological inventory survey of a nearby 0.43-acre portion of land (Madeus and Fredericksen, 2006). One newly identified historic property, Site 50-50-13-5946, was documented during this 2006 survey. Site 5946 consists of a total of four features (A-D), two of which are terraces, one is a depression, and the other is a low platform. The State Historic Preservation Division (SHPD) approved project mitigation measures included in-place preservation for Features A-C, and a monitoring program for future earthmoving activities on this parcel (SHPD DOC NO: 0612MK31), which is less than 1 km. southwest of the current project area.

The Kawaipapa Complex (SIHP<sup>10</sup> 50-50-13-1485) is located near to the above project area (and Site 5496) discussed above. This complex has never been fully studied, but was documented during the State Inventory in 1973. This complex consists of a (now restored) fishpond<sup>11</sup> and two caves. This area has been extensively developed and contains several vacation rental units. As previously noted above, this interesting complex has never been fully investigated.

Other sites that are contained within Kawaipapa *ahupua'a* include Kauleilepo Heiau (SIHP 50-50-13-110), Kauleiula Heiau (Site 109), Waikoloa Platform (Site 107), and Kaianalimu habitation site (Site 1491). In addition, a post-contact cemetery lies about 1 km to the north of the study area on the southern side of Kawaipapa Gulch.

Finally, Erik Fredericksen of Xamanek Researches, LLC has previously observed what appears to be an undocumented subsurface site near the mouth of Kawaipapa Stream, c. 225 m *makai* of the 2006 Xamanek Researches LLC project area discussed above. This unrecorded site was noted during an inspection of the near coastal area for a project that has subsequently been abandoned. The presence of marine shell and charcoal flecking in an eroded section near the coast suggests that this undocumented site may be a near coastal habitation area.

## Settlement Patterns and Land Use

Previous archaeological work in the general vicinity of the current project area suggests that this coastal portion of Maui was likely utilized in precontact times for permanent and temporary habitation, agriculture, coastal marine exploitation and ceremonial purposes (Fredericksen et al., 1993; Haun et al., 2004; Henry and Graves,

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<sup>10</sup> SIHP = State Inventory of Historic Places.

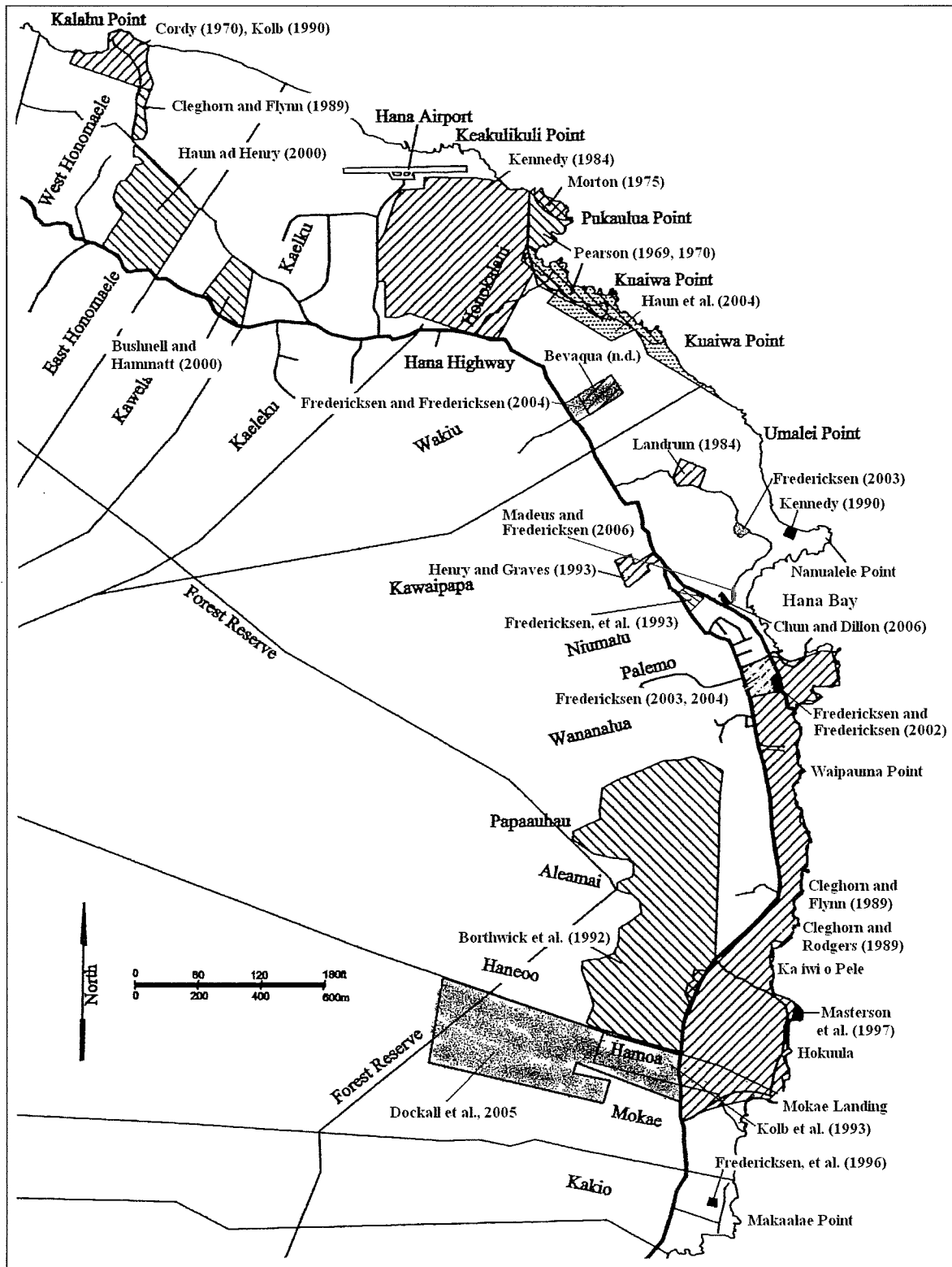
<sup>11</sup> In the State Inventory data sheets (refer to Appendix A), the then dry pond was also interpreted as a possible wet taro field.

1993; Kirch, 1985; Pearson, 1970). It does not appear that much of the more rugged inland portion of the Hana coast was heavily utilized for post-contact commercial sugar and ranching activities in this area, because it contains little soil and is quite rocky.

### **Expected Findings**

Given the location of the current study area there was a possibility that remnants of precontact habitation and agricultural activities could be located near the APE for the makai Hana Landfill. There was also a possibility that post-contact use of the area could have altered and/or modified any precontact features that might be located within the portion of the affected Parcel 12.





## FIELD METHODS

Per the request of Ms. Elaine Baker, County of Maui, Department of Environmental Management, Xamanek Researches LLC carried out an archaeological assessment survey of a 6.4-acre portion of Parcel 12. The project area is referred to as the *Makai* Landfill, and is located within a portion of the overall Hana Landfill facility. Prior to initiating fieldwork, Erik Fredericksen met with the SHPD Maui staff archaeologist to discuss the project and develop a testing methodology. Given that the c. 6-4 acre APE is covered by refuse and debris, it was concluded that subsurface investigation could occur at the margins of the old landfill. Waikoloa Road is to the west, and the rest of the irregularly shaped Area of Potential Effect (APE) is surrounded by portions of Parcel 12 (refer to Figure 4).

The project area lies in Kawaipapa *ahupua'a*, Hana District, Island of Maui (see Figure 2 through 4). The c. 6.4-acre Area of Potential Effect was covered by our archaeological fieldwork. Marco Molina B.A. carried out the archaeological survey fieldwork. Ms. Baker met Mr. Molina at the project site on 29 May 2015, and showed him the project limits and introduced him to the heavy equipment operator, Mr. Frank Cabral. Mr. Molina then carried out a pedestrian inspection of the surface area along the margins of the abandoned landfill (see Figure 4). No surface evidence of any significant material culture remains was encountered at this time. Rather, it appeared that the area had been previously grubbed in the past year or so.<sup>12</sup> Subsurface investigation was carried out on 3 June 2015. Erik M. Fredericksen was the principal investigator and project director for this assessment survey.

The archaeological investigation consisted of a surface survey of the perimeter of the *Makai* Landfill, and mechanical excavation of 14 Backhoe Tests (BTs). The pedestrian inspection of the project area was accomplished through systematic sweeps along the perimeter of the *Makai* Landfill. Observations were recorded and documented in written and digital formats.

The mechanical excavations of the BTs were closely monitored and there were no traditional Hawaiian cultural materials or cultural deposits identified in any of the excavated trenches. Following each backhoe trench excavation, representative wall profiles were prepared. The wall profiles were mapped to scale and described using Munsell soil colors and U.S. Soil Conservation Service terminology. The completed excavations were then photographed and backfilled. Project notes, maps, and photographs are stored on site at our facility in Pukalani, Maui.

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<sup>12</sup> This previous disturbance was subsequently determined to be associated with previous soil sampling work that had occurred in 2014 in support of forthcoming environment remediation work.

## **RESULTS OF FIELDWORK**

There were no significant material culture remains located during the surface inspection of the *Makai* Landfill project area. In addition, no significant cultural materials were identified during archaeological assessment level subsurface sampling within accessible portions of the project APE. Subsurface testing suggests that this portion of the Hana Landfill is very rocky and covered by thin soil. Material interpreted as weathered *a'a* was encountered in all 14 backhoe test trench locales. In addition, some trenches also contained red (7.5YR4/6) cinder that was used in some portions of the landfill facility as a “capping” material.

As previously noted, the surface walkover of the APE was conducted on 29 May 2015. During visual inspection of the project area, it became apparent that the area in the vicinity of the Makai Landfill had been previously disturbed by earthmoving activities. Refer to Photos 1-8 for general project conditions.

## General project photographs 1-8



**Photo 1: General view to the NE of the Makai Landfill from near the County operations office. Project area visible in background.**



**Photo 2: General view to the ENE of the Makai Landfill from the road.**





**Photo 3: General view to the E of the *Makai* Landfill, Hana.**



**Photo 4: General view to the SE of the *Makai* Landfill (at right), Hana.**



**Photo 5: General view to the N of the *Makai* Landfill (at center and right), Hana.**



**Photo 6: General view to the E of the *Makai* Landfill, Hana.**





**Photo 7: General view to the SW of access road for the *Makai* Landfill, Hana.**



**Photo 8: General view to the ENE of bulldozed fisherman access pathway to ocean.**







## Project stratigraphy

There were up two shallow fill layers and one stratigraphic layer present in tested portions of the APE:

Layer Ia (0-10 cmbs)	7.5YR4/4, dark brown, silty clay loam, medium and single grain; loose, slightly sticky and slightly plastic consistency; 20% sub-angular cobbles and pebbles as inclusions; contains no cultural material; abundant roots present
Layer Ib (0-30 cmbs)	7.5R4/6, red, cinder fill; used to cover portions of the landfill; contains no cultural material
Layer II (150-160 cmbs)	2.5YR2.5/1, reddish black, a'a lava; generally loose and unconsolidated; denser flow rock in some test locales at bottom of excavation; contains no cultural material

As noted above, there were no indigenous Hawaiian cultural materials noted during the excavation of the 14 trenches. The stratigraphy was similar across the tested portion of the project area; with one common stratum (*a'a* clinker [Layer 3]) in all backhoe trenches (see discussion below). Backhoe Trenches 1-10 contained thin soil fill (Layer 1), which overlaid *a'a* clinker (Layer 3). Backhoe Trenches 11-14 contained red cinder fill (Layer 2), which overlaid Layer 3.

## Backhoe Trench Test Results

As previously mentioned above, there were 14 backhoe trenches excavated in accessible portions of the project APE (Figure 7). These trenches were utilized to determine the soil stratigraphy of the project area. These tests were c. 2.5-3.5 m in length by 0.8 m in width by up to 1.5 m in depth, depending on the rockiness of subsurface conditions. Refer to Table 2 for a summary of each of the 14 excavated trenches.

## **Project Backhoe Trench Photographs 9-22**



**Photo 9: Overview of BT 1, view to the NNE. Note: area previously grubbed.**





**Photo 10: Overview of BT 2, view to the ENE.**





**Photo 11: Overview of BT 3, view to the ENE.**





**Photo 12: Overview of BT 4, view to the north.**





**Photo 13: Overview of BT 5, view to the west.**





**Photo 14: View of BT 6, view to the WNW.**





**Photo 15: View of BT 7, view to the WNW**





**Photo 16: View of BT 8, view to the north.**





**Photo 17: View of BT 9, view to the SSW.**





**Photo 18: View of BT 10, view to the SSE.**





**Photo 19: View of BT 11, view to the south.**





**Photo 20: View of BT 12, view to the SE.**





**Photo 21: View of BT 13, view to the ENE.**





**Photo 22: View of BT 14, view to the WSW.**



## Project Profiles Backhoe Trenches 1-14<sup>13</sup> (Figures 8-22)

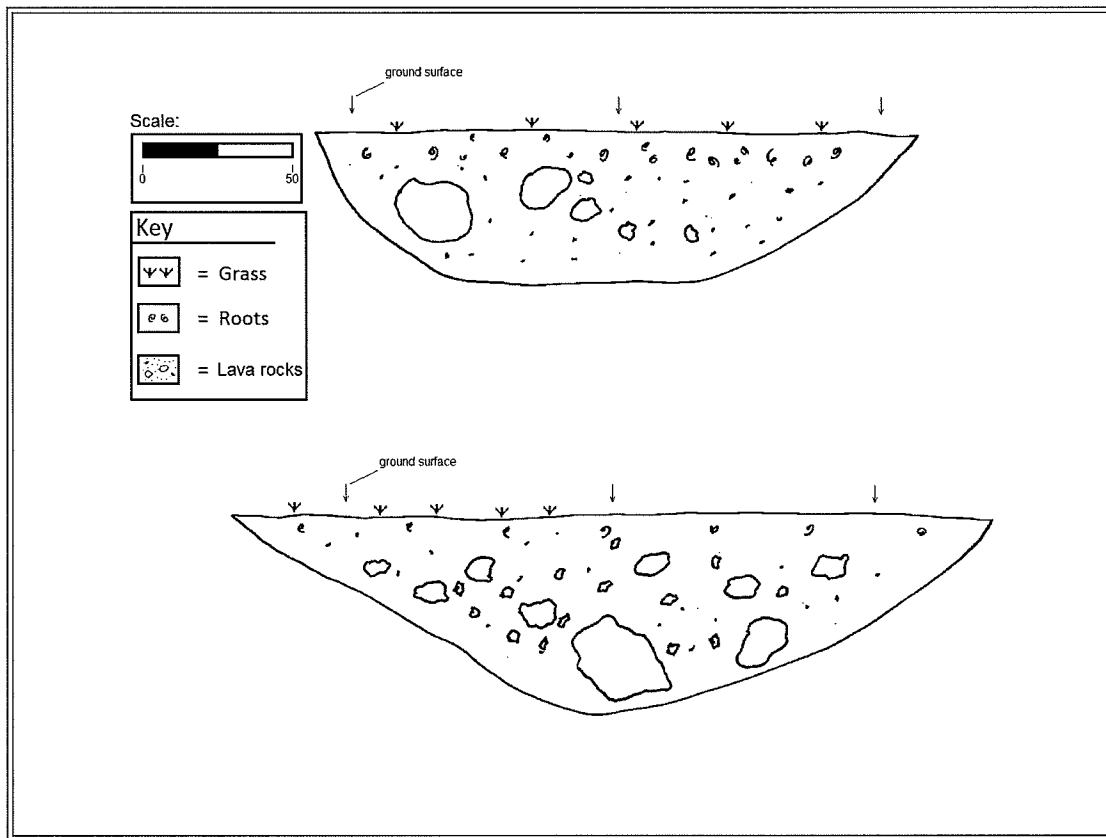
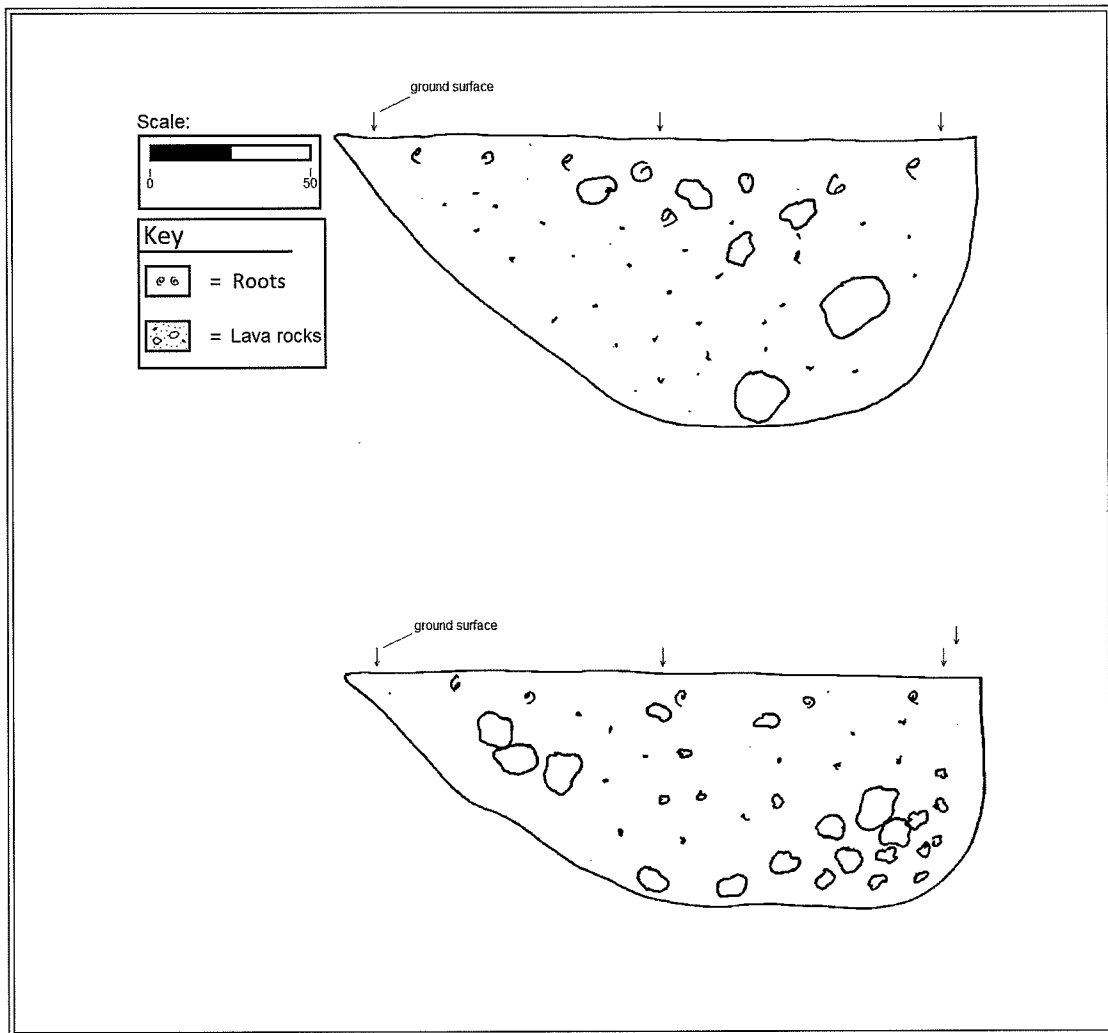
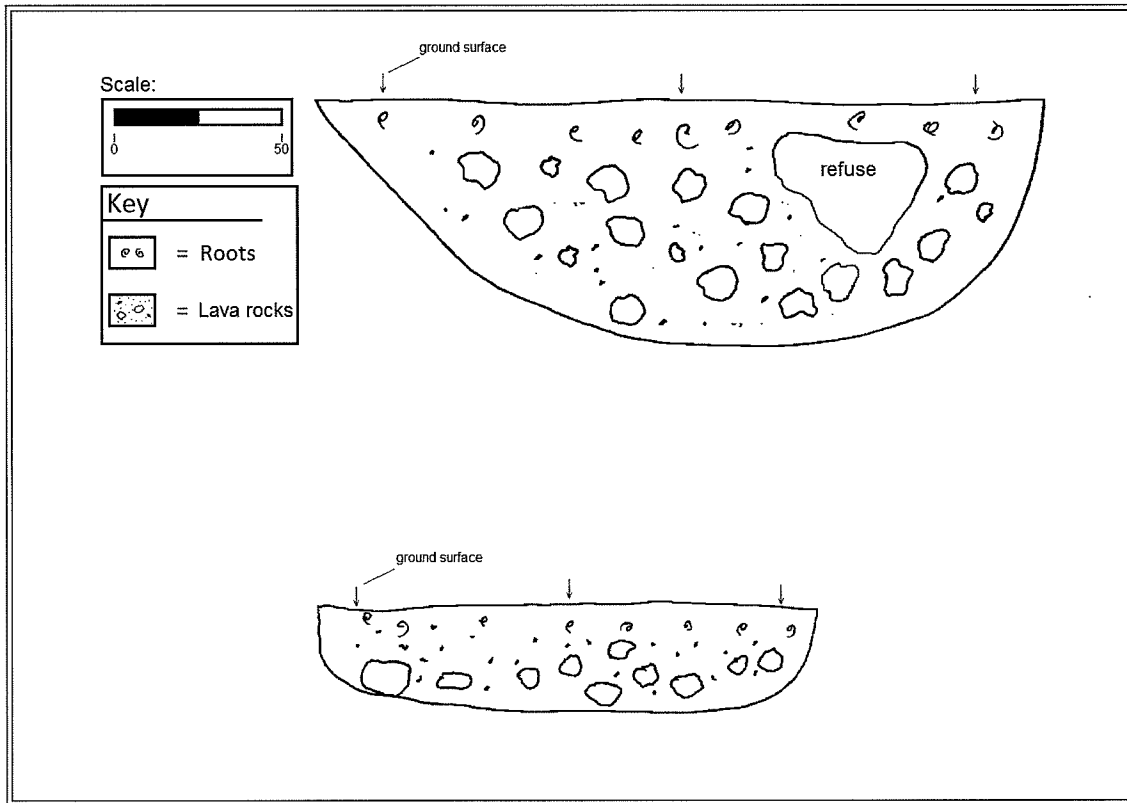


Figure 8: Backhoe Trench 1 (SSE profile, upper) and BT 2 (NNW profile, lower).

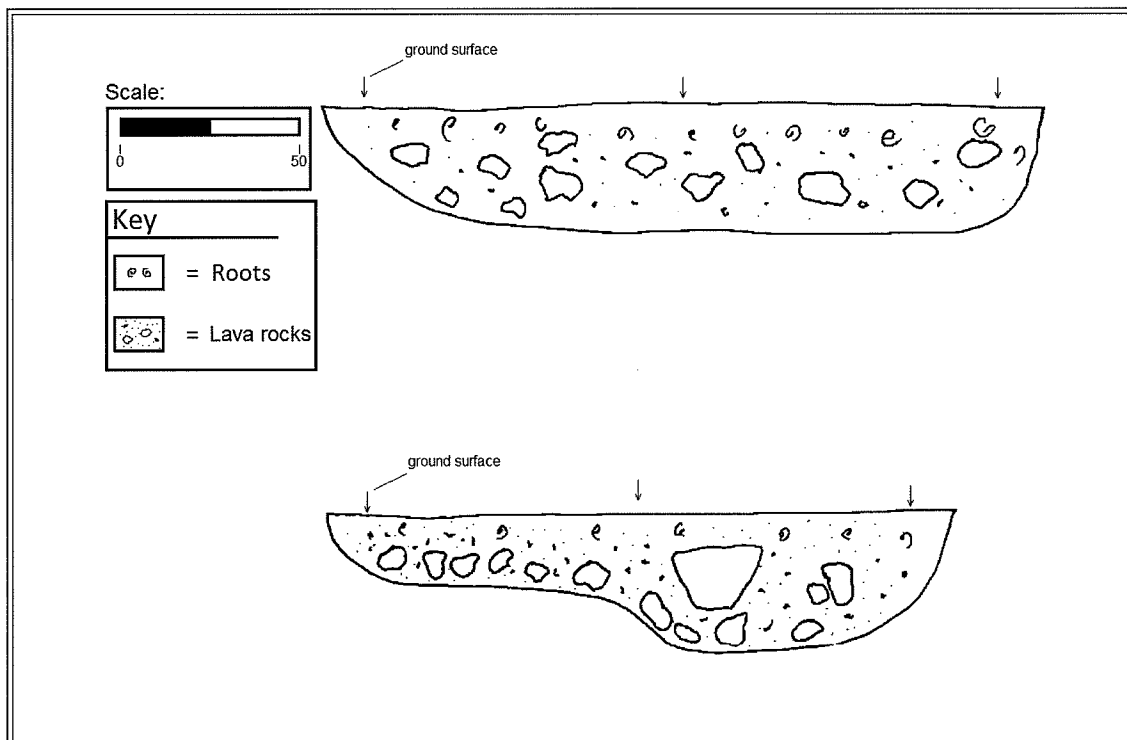
<sup>13</sup> Note: graphic scales depicted in all figures are in centimeters.



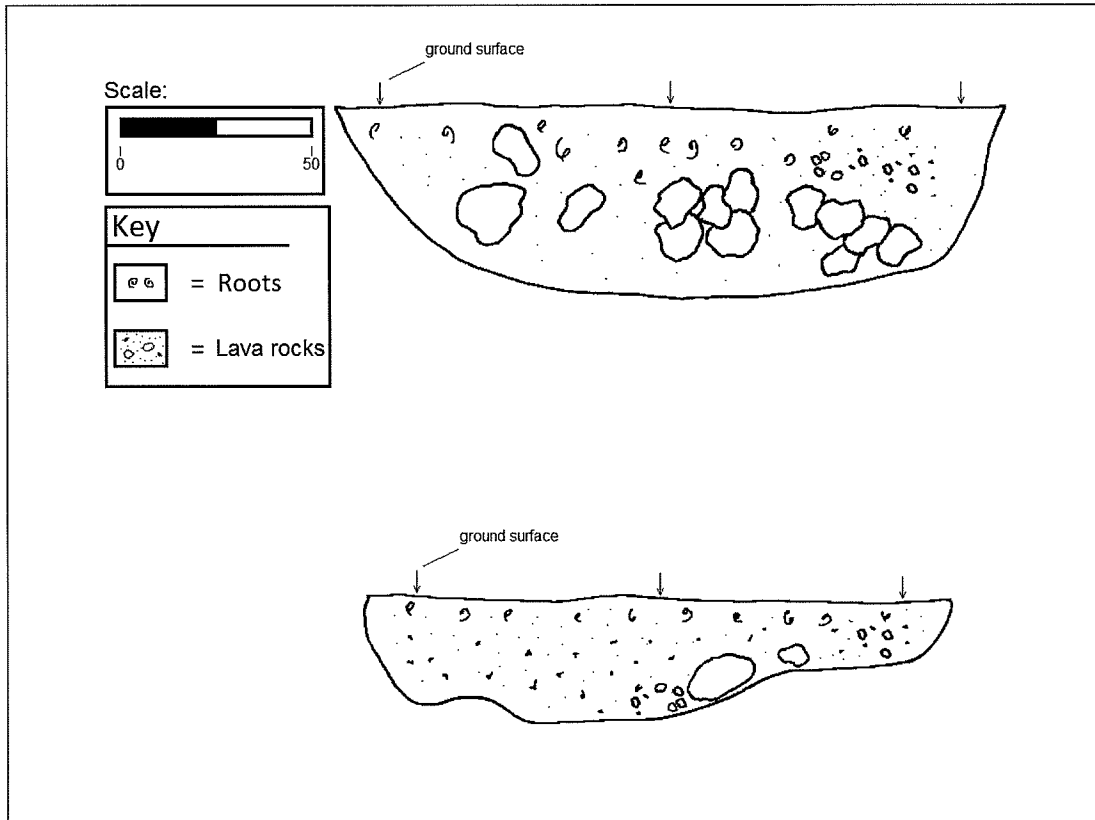
**Figure 9: Backhoe Trench 3 (SSE profile, upper) and BT 4 (east profile, lower).**



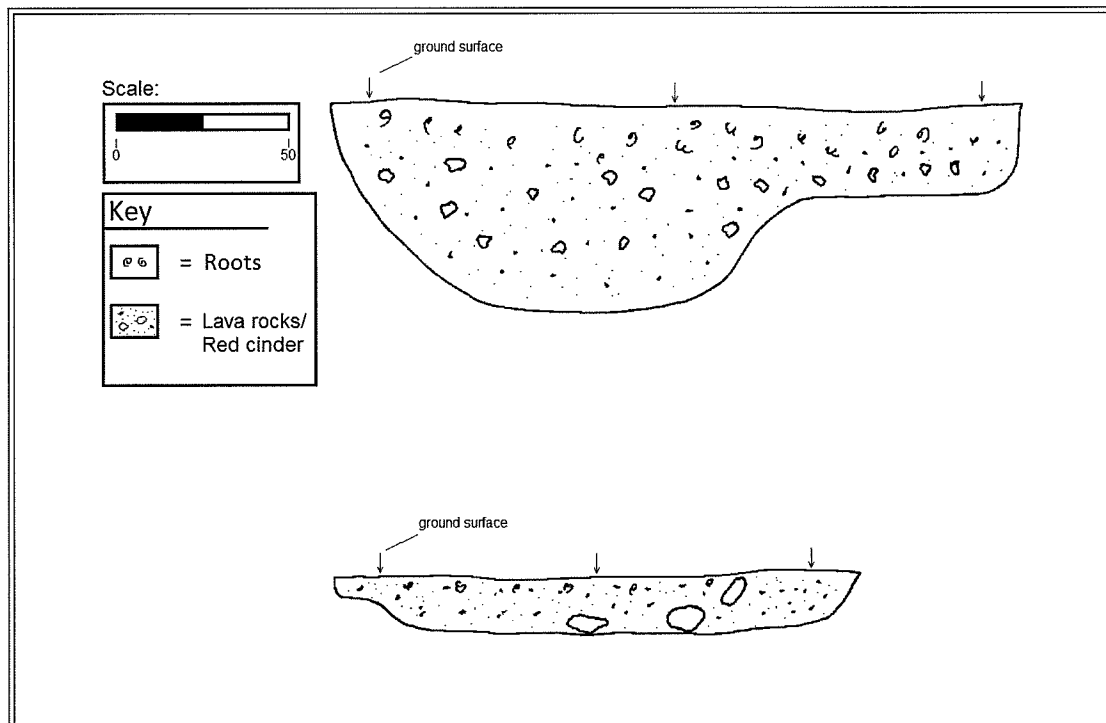
**Figure 10: Backhoe Trench 5 (south profile, upper) and BT 6 (NNE profile, lower).**



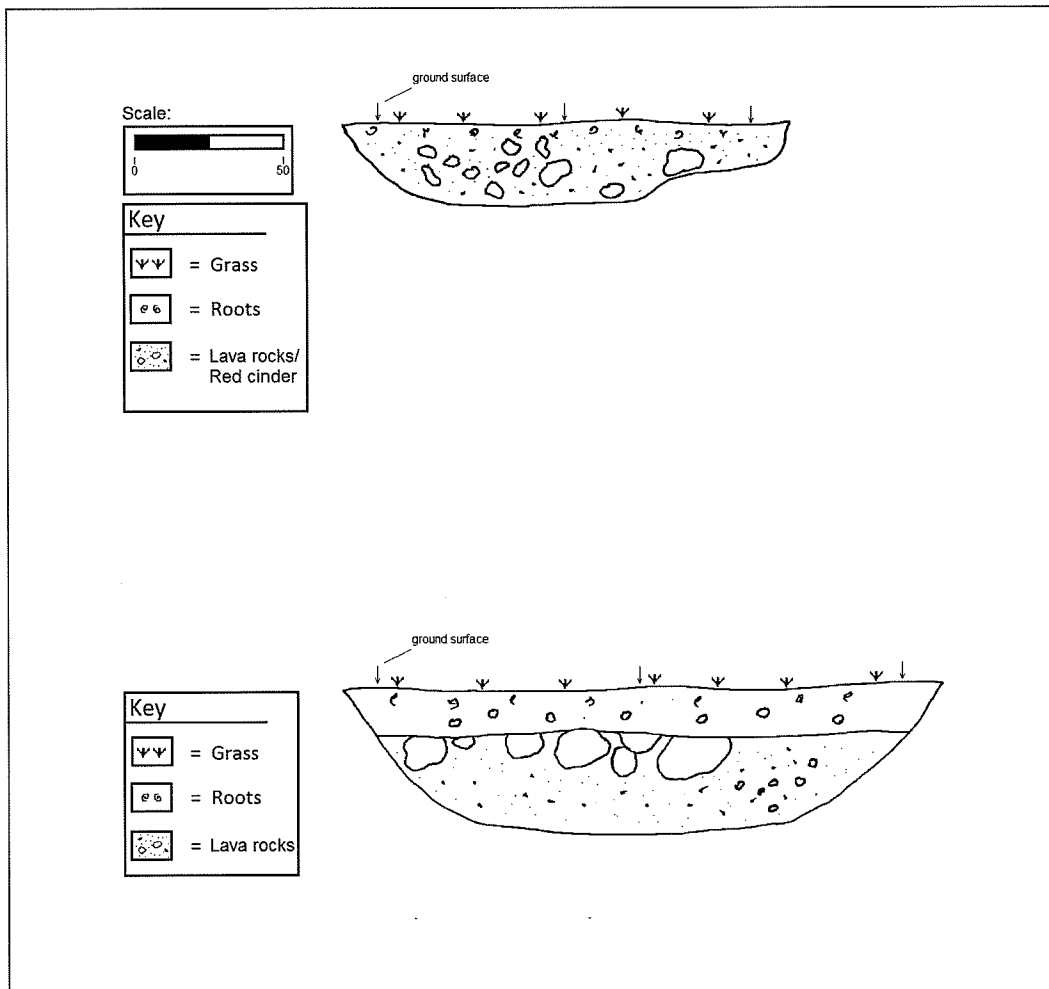
**Figure 11: Backhoe Trench 7 (NNE profile, upper) and BT 8 (E profile, lower).**



**Figure 12: Backhoe Trench 9 (WNW profile, upper) and BT 10 (WSW profile, lower).**



**Figure 13: Backhoe Trench 11 (east profile, upper) and BT 12 (SW profile, lower).**



**Figure 14: Backhoe Trench 13 (NNW profile, upper) and BT 14 (SSE profile, lower).**

**Table 2: Summary of test results for Backhoe Trenches 1 through 14**

BT #	Length	Width	Wall profile	Layer	Depth	Layer descriptions	Cultural material
1	3.5 m	0.8 m	SSE wall	I	0-10 cmbs	7.5YR 4/4, brown, loose, silty loam fill, 20% subangular basalt cobbles, roots	None
				II	10-75 cmbs	2.5YR 2.5/1, black, loose, <i>a'a</i> clinker, 80% subangular basalt cobbles	None
2	3.0 m	0.8 m	NNW wall	I	0-10 cmbs	7.5YR 4/4, brown, loose, silty loam fill, 20% subangular basalt cobbles, roots	None
				II	10-90 cmbs	2.5YR 2.5/1, black, loose, <i>a'a</i> clinker, 80% subangular basalt cobbles	None
3	3.0 m	0.90 m	SSE wall	I	0-10 cmbs	7.5YR 4/4, brown, loose, silty loam fill, 20% subangular basalt cobbles, roots	None
				II	10-125 cmbs	2.5YR 2.5/1, black, loose, <i>a'a</i> clinker, 80% subangular basalt cobbles	None
4	3.5 m	0.90 m	East wall	I	0-10 cmbs	7.5YR 4/4, brown, loose, silty loam fill, 20% subangular basalt cobbles, roots	None
				II	10-110 cmbs	2.5YR 2.5/1, black, loose, <i>a'a</i> clinker, 80% subangular basalt cobbles	None
5	3.5 m	0.80 m	South wall	I	0-10 cmbs	7.5YR 4/4, brown, loose, silty loam fill, 20% subangular basalt cobbles, roots	None
				II	10-110 cmbs	2.5YR 2.5/1, black, loose, <i>a'a</i> clinker, 80% subangular basalt cobbles	None
6	3.0 m	0.80 m	NNE wall	I	0-5 cmbs	7.5YR 4/4, brown, loose, silty loam fill, 20% subangular basalt cobbles, roots	None
				II	0-35 cmbs	2.5YR 2.5/1, black, loose, <i>a'a</i> clinker, 80% subangular basalt cobbles	None
7	3.0 m	0.80 m	NNE wall	I	0-5 cmbs	7.5YR 4/4, brown, loose, silty loam fill, 20% subangular basalt cobbles, roots	None
				II	0-40 cmbs	2.5YR 2.5/1, black, loose, <i>a'a</i> clinker, 80% subangular basalt cobbles	None
8	3.5 m	0.80 m	NNE wall	I	0-5 cmbs	7.5YR 4/4, brown, loose, silty loam fill, 20% subangular basalt cobbles, roots	None
				II	0-50 cmbs	2.5YR 2.5/1, black, loose, <i>a'a</i> clinker, 80% subangular basalt cobbles	None
9	3.5 m	0.80 m	NNE wall	I	0-5 cmbs	7.5YR 4/4, brown, loose, silty loam fill, 20% subangular basalt cobbles, roots	None
				II	0-70 cmbs	2.5YR 2.5/1, black, loose, <i>a'a</i> clinker, 80% subangular basalt cobbles	None

cm=centimeter, m = meter, and BT=backhoe test



**Table 2 cont.**

10	3.5 m	0.80 m	NNE wall	I	0-5 cmbs	7.5YR 4/4, brown, loose, silty loam fill, 20% subangular basalt cobbles, roots	None
				II	5-50 cmbs	2.5YR 2.5/1, black, loose, <i>a'a</i> clinker, 80% subangular basalt cobbles	None
11	3.5 m	0.80 m	East wall	I	0-5 cmbs	7.5R 4/6, red, loose, cinder fill; used to cap portions of the landfill	None
				II	5-120 cmbs	2.5YR 2.5/1, black, loose, <i>a'a</i> clinker, 80% subangular basalt cobbles	None
12	3.0 m	0.80 m	SW wall	I	0-5 cmbs	7.5R 4/6, red, loose, cinder fill; used to cap portions of the landfill	None
				II	5-25 cmbs	2.5YR 2.5/1, black, loose, <i>a'a</i> clinker, 80% subangular basalt cobbles	None
13	2.5 m	0.80 m	NNW	I	0-5 cmbs	7.5R 4/6, red, loose, cinder fill; used to cap portions of the landfill	None
				II	5-30 cmbs	2.5YR 2.5/1, black, loose, <i>a'a</i> clinker, 80% subangular basalt cobbles	None
14	3.5 m	0.80 m	SSE	I	0-5 cmbs	7.5R 4/6, red, loose, cinder fill; used to cap portions of the landfill	None
				II	5-70 cmbs	2.5YR 2.5/1, black, loose, <i>a'a</i> clinker, 80% subangular basalt cobbles	None

## SUMMARY AND CONCLUSIONS

The archaeological assessment survey utilized a pedestrian surface survey of the APE, as well as mechanical subsurface testing. A total of 14 backhoe test excavations were utilized to assess subsurface conditions along the margins of the old *Makai* Landfill. Shallow fill deposits were found to overlay *a'a* lava clinker in sampled portions of the project area. There were no significant material culture remains located during our surface inspection and subsurface testing of accessible portions of the project area. The general area in the vicinity of the margin of the *Makai* Landfill appears to have been previously impacted by bulldozing activities.

## RECOMMENDATIONS

The archaeological assessment survey discussed in this report was designed and completed to meet DLNR-SHPD requirements for the subject environmental remediation project. As previously noted, the pedestrian survey and subsurface test results did not yield any evidence of remnant cultural activities in the APE. However, given the near coastal location of the proposed environmental remediation project, as well as the fact that it was not possible to test within much of the physical footprint of the *Makai* Landfill, archaeological monitoring is recommended during initial earthmoving activities around the margins of the old landfill, and periodically when the operations near the original land surface elevation.

Given the extended time necessary for the proposed environmental remediation project at the *Makai* Landfill, it is further recommended that the project specific monitoring plan be developed with input from the State Historic Preservation Division staff archaeologist for the Maui office.

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# **APPENDIX D.**

## **Cultural Interview**



**PROPOSED MAKAI HANA LANDFILL  
CLEAN-UP AND CLOSURE PROJECT**

***Cultural Impact Assessment***

*Interview with:* Harolen Kaiwi

*Interview date:* July 15, 2015

*Interviewed by:* Colleen Suyama, Senior Associate  
Munekiyo Hiraga

Ms. Harolen Kaiwi is of Hawaiian descent and was born in 1961 in Hana and is a life-long resident of Hana. She is the daughter of Harold and Helen Nakaoka. Her family connection to the Hana region is from Keanae and lower Nahiku. She has two (2) brothers who live in Kahului and three (3) sisters who are also Hana residents. She has a daughter and three (3) sons who are residents of Hana. Ms. Kaiwi worked for the Hotel Hana Maui for 30 years before moving to the Hana Ranch Grocery Store five (5) years ago to become one of the store's managers.

Ms. Kaiwi is the President of the Hana Cultural Center and Museum, Vice President of the non-profit organization Ohana Makamae, and a member of the American Red Cross. Her involvement with the Hana Cultural Center and Museum is due to her desire to learn and preserve the Hawaiian culture, as well as, her desire to educate her children and others in the culture. Ohana Makamae is Hana's family resource center that provides culturally based substance abuse treatment and family support.

Ms. Kaiwi recalls when she was growing up the old Hana Landfill was referred to by some members of the community as "Woolworths". Residents would carefully set aside usable items at the landfill for other Hana residents to pick-up and reuse. The landfill was like shopping at Woolworths. This practice ended before 1979 when she graduated from high school.

Waikoloa Road, besides being the access to the Hana Landfill, is also used for access to the shoreline. Residents continue to use the shoreline area for fishing and gathering of food, such as opihi. She is aware that the Piilani Trail is located along the shoreline and that there are numerous ways to get to the shoreline. Ms. Kaiwi noted that the operations at the Hana Landfill do not limit access to the shoreline.

Ms. Kaiwi also noted that nearby is an existing fishpond in the Keanini Point area that crosses the Kalalau property. Because access to the fishpond is through private property she does not use the fishpond.

Ms. Kaiwi felt the existing landfill is beautiful and the workers do a good job. She did not express any concerns regarding the proposed closure of the Makai Hana Landfill. She

also did not note any ongoing cultural practices or issues associated within the landfill area.

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